Coquitlam

City of Coquitlam

Supplementary Specifications and Detailed Drawings to MMCD 2000 Edition

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V3B 7N2

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SUPPLEMENTARY SPECIFICATIONS

Revision Date: July 24/2003

1561 Environmental Protection

1.0 General

1.3 Drainage

Replace 1.3 0 – Drainage as follows:

"1.3 Drainage, Erosion and Sediment Control

"Properly drain all portions of the site. Protect the site and the watercourses to which it drains, directly or indirectly, against erosion and siltation in accordance with a Sediment Control Plan under the City of Coquitlam Stream and Drainage System Protection Bylaw No. 3447, 2001 during construction and until the maintenance period is completed. Ensure no silt, gravel, debris or other deleterious substance resulting from construction activity discharges into existing drainage systems or watercourses or onto highways or adjacent property. The Contractor is responsible for all damage that may be caused by water backing up or flowing over, through, from or along any part of the work or otherwise resulting from his operations.

Keep existing culverts, drains, ditches and watercourses affected by the work clear of excavated material at all times. When it is necessary to remove or alter any existing drainage structure, provide suitable alternative measures for handling the drainage. Adequately support culverts and drainpipes across trenches to prevent displacement and interference with the proper flow of water due to trench settlement.

Sweep streets, and clean catchbasins, manhole sumps, detention tanks, and maintain siltation controls as often as the Manager deems necessary.

Follow all Federal and Provincial regulations and guidelines respecting protection of fish, fish habitat, and watercourses.

1.6 Pollution Control

Add to 1.6 – Pollution Control as follows:

.5 Immediately contain and clean up any leaks and spills of prohibited materials on the job site.

.6 Ensure that a well-stocked spill kit is on-site at all times and that the Contractor's employees are familiar with appropriate spill response techniques.

.7 Immediately notify the Contract Administrator of any leaks or spills of prohibited materials that occur on the job site.

.8 Ensure that any fuel stored on-site is located at least 15 metres from the nearest stream, and is placed within a bermed and lined area, in order to prevent leaks or spills into the environment.

.9 Ensure that no equipment fueling or servicing is conducted within 15 metres of a stream.

1.9 Archaeological/ Historical Resources

Add 1.9 Archaeological/Historical Resources

Immediately cease work and inform the Contract Administrator, if any archaeological or historical resources are encountered during construction. Leave these resources in place and do not disturb them in any way.

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2104 Shrub and Tree Preservation

2.0	**Products**	
2.1.10	Materials	Add Clause 2.1.10: Protective Fencing: Posts - Pressure treated wood 100 mm dia.; Post to be 1.8m to 2.0m in height at 2.0m O.C. Snowfence - Dupont L-70 or approved equivalent; Flagging Tape - 4" Orange glow - 'Tree Retention Area'.
3.0	**Execution**	
3.0.1		Add Clause 3.0.1: The Contractor is responsible to minimize damage to all trees which are to remain.
3.0.2		Add Clause 3.0.2: The Contractor will be responsible for all claims and costs including the cost of examination by an Arborist, repair, removal and replacement of trees, as required by the Arborist and the Contract Administrator for tree damage where proper notification was not received from the Contractor. Damage will be assessed based on the International Society of Arboriculture Guidelines. The term shall be for a period of one year following the date of Total Performance of the contract work.
3.1.7	Existing Trees	Add Clause 3.1.7: Place protective fencing/barricades as detailed on Standard Drawing COQ-R15. Contractor shall maintain fence in good condition during construction.
3.1.8		Add Clause 3.1.8: When work is to be performed inside fenced areas, Contractor shall take care to avoid damage to existing vegetation. Work to be done inside areas of existing vegetation to be retained includes: .1 Removal of isolated trees as directed by Contract Administrator. .2 Selective pruning and tree removal at edges to create tidy and well-shaped forest edge. .3 Placing planting soil and planting of trees.
3.1.9		Add Clause 3.1.9: Do not park, service or fuel vehicles within the vegetation retention areas.
3.4	Pruning	Add Clause 3.4.2: Do not cut roots or branches of retained trees without approval of Contract Administrator.

2210 Site Grading

1.4	Measurement and Payment	Delete Clause 1.4.4 and replace with: Where determined by the Contract Administrator that truck box volume will be used to determine excavation quantities the volume per load shall be determined using 75% of the struck box quantity. 1.4.8 Replace reference to Section 2210 with Section 2224, 1.8.5

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2221 Rock Removal

1.0 General

1.7	Seismic Survey	Delete Clause 1.7.1: Contract Administrator will arrange for professional assessment of adjacent buildings and structures to determine existing conditions and will provide the Contract Administrator and the building and structure owners with proposed blasting procedures and copies of assessment reports and seismic recording operations. and replace with: Contractor will arrange for assessment of adjacent buildings and structures to determine existing conditions and will provide building and structure owners with proposed blasting procedures and copies of assessment reports and seismic recording operations.
1.7.2	Seismic Survey	Delete Clause 1.7.2: Cost of seismic survey and monitoring reports will be paid by Owner and replace with: Cost of professional seismic survey and monitoring reports will be paid by Contractor.

2223 Excavating, Trenching and Backfilling

2.0 Products

3.6.3.1	Surface Restoration	Delete Clause 3.6.3.1: Restore surface with minimum 75mm granular road base material. and replace with: Restore surface with minimum 100mm of 19mm granular road base material.

2224 Roadway Excavation Embankment and Compaction

1.0 General

1.8	Measurement for payment	Delete Clause 1.8.5.2: Initial cross-sections will be taken after clearing and grubbing and stripping of topsoil, and immediately prior to excavation of material to be incorporated into work. and replace with: Cross-sections will be taken after clearing and grubbing and after stripping of topsoil immediately prior to excavation of material to be incorporated into work. Delete Clause 1.8.5.4 Where the average thickness of excavation is less than 0.5 metre, volume will be established from loose truck box volume as determined by Contract Administrator. and replace with: Where determined by the Contract Administrator that truck box volume will be used to determine excavation quantities the volume per load shall be determined using 75% of the struck load quantity.

Delete Clause 1.8.8 Measurement for peat excavation and off-site disposal will be made by loose truck box volume is a watertight truck.

and replace with: Where determined by the Contract Administrator that truck box volume will be used to determine excavation quantities the volume per load shall be determined using 75% of the struck load quantity.

2226 Aggregates and Granular Materials

2.0 Products

2.7 Granular Pipe Bedding and Surround Material — Recycled concrete and surround material with prior approval of the Contract Administrator.

2231 Reshaping Granular Roadbed

1.4 Measurement and Payment — 1.4.3 Delete sentence: Measurement will be made by loose truck box volume of the suitable material brought to the site and incorporated into the work.

And add: Where determined by the Contract Administrator that truck box volume will be used to determine excavation quantities the volume per load shall be determined using 75% of the struck load quantity.

2233 Granular Base

3.0 Execution

3.5 Proof Rolling — Add Clause 3.5.7: Prior to paving with asphalt concrete, the base surface shall be checked by the Contract Administrator, for deflections utilizing a Benkleman Beam, in order to insure that the final rebound requirements can be obtained with the asphalt pavement. In the event that such deflection are in excess of those required to produce the final standards, than the base shall be adequately strengthened by additional gravel or asphalt concrete to insure that final deflections as follows are not exceeded.

The Benkleman spring rebound value of the completed pavement surface shall not at any point exceed 0.75mm for arterial industrial roads and lanes, 1.15mm for collector roads, and 1.5mm for local roads and lanes as determined in the procedures outlined in the Transportation Association of Canada publication "Pavement Management Guide".

2234 Granular Subbase

2.0 Products

2.1 Specified Materials — Delete Clause 2.1.1.2: 75mm pit run gravel.
Delete Clause 2.1.1.4: pit run sand
Delete Clause 2.1.1.5: approved native material

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2235 Reshape Existing Subgrade

1.4	Measurement and Payment	1.4.2 Delete sentence: Measurement will be made by loose truck box volume of the sub-base brought to the site and incorporated into the work. And add: Where determined by the Contract Administrator that truck box volume will be used to determine excavation quantities the volume per load shall be determined using 75% of the struck load quantity.
1.4.2	Measurement and Payment	Delete last sentence: Measurement will be made by loose truck box volume of the sub-base brought to the site and incorporated into work.

2512 Hot-Mix Asphalt Concrete Paving

The following specifications shall apply where Superpave™ is specified in the Contract Documents

2.1 Materials

Add new clause 2.1.5:
"Asphalt Cement: For Superpave™
volumetric mix design the asphalt cement shall meet or exceed Performance Grade PG 64-22.
The asphalt supplier shall be required to
submit test results conforming to the PG specifications. All documented technical data, including softening curves on the asphalt must be supplied to the Contract Administrator."

Add new clause 2.1.6:
"Aggregates: For Superpave™ volumetric mix design the following shall apply:

.1 Source Aggregate Properties

Source Aggregate Properties such as toughness, soundness and deleterious materials shall be considered as acceptance criteria. The criteria are listed below:

Property	Criteria	Procedure
Toughness	max 35%	ASTM C131
Soundness	max 10%	ASTM C88
Deleterious Material	max 5%	ASTM C142

The contractor shall provide a statement confirming the source compliance with the project specifications based on certified test data.

.2 Consensus Aggregate Properties

Consensus Aggregate Properties such as coarse aggregate angularity, fine aggregate angularity, flat and elongated particles and clay content are evaluated in conjunction with traffic volume and position within the pavement structure. The following design specifications are based on a traffic level of 3 to 30 million ESALs with design mat thickness less than 100 mm depth.

Coarse Aggregate Angularity: at least 95% of the coarse aggregate shall have one or more freshly fractured faces and at least 90% shall have two or more freshly fractured faces as determined by ASTM D5821, "*Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate*" or MOTH BC test procedure BCH I-13, "*Fracture Count*".

Fine Aggregate Angularity: tested to AASHTO TP33, "*Test Method for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture and Grading)*" shall be a minimum of 45%.

Flat and Elongated Particles: This characteristic is the percentage by weight of coarse aggregates that have a maximum to minimum dimension of greater than five. The test procedure used is ASTM D4791, "*Flat Particles, Elongated Particles or Flat and Elongated Particles in Coarse Aggregate*". The combined value shall not exceed 10%.

Clay Content: The purpose of this test is to indicate the relative proportions of plastic fines and dust in fine aggregates that pass the 4.75 mm sieve. It is measured by ASTM D2419, "*Test Method for Sand Equivalent value of Soils and Fine Aggregate*". The sand content shall meet minimum 45% requirement.

Gradation: The design aggregate structure shall lie between the Control Points and avoid the Restricted Zone for the following Superpave™ mixtures when tested to ASTM C136 and ASTM C117:

Superpave™ 19 mm Nominal Size for Lower Course

Sieve	**Control Points**		**Restricted Zone (mm) Boundary**	
	Min.	**Max.**	**Min.**	**Max.**
25		100.0		
19	90.0	100.0		
12.5		90.0		
9.5				
4.75				
2.36	23.0	49.0	34.6	34.6
1.18			22.3	28.3
0.600			16.7	20.7
0.300			13.7	13.7
0.150				
0.075	2.0	8.0		

Superpave™ 12.5 mm Nominal Size for Upper Course

Sieve	Control Points		Restricted Zone (mm) Boundary	
	Min.	Max.	Min.	Max.
19		100.0		
12.5	90.0	100.0		
9.5		90.0		
4.75				
2.36	28.0	58.0	39.1	39.1
1.18			25.6	31.6
0.600			19.1	23.1
0.300			15.5	15.5
0.150				
0.075	2.0	10.0		

It is recommended that the gradations pass below the restricted zone, but this is not a requirement. The contractor shall provide a gradation curve based on the results of at least five (5) samples for each aggregate type. The curve shall note the upper and lower limits of the production control process."

2.2.3.2 Mix Design

Change Marshall Stability for both lower and upper course to "10 kN min".

2.2

Add new clause 2.2.4:

"For Superpave™ volumetric mix design the following shall apply:

.1 Design of mix will follow volumetric procedures as published in the Asphalt Institute Manual SP-2, Superpave™ volumetric mix design modified by AASHTO PP-28 (standard practice for Superpave™ volumetric mix design for hot mix asphalt).

.2 The contractor shall provide Superpave™ volumetric mix design using a gyratory compactor.

.3 Should it become necessary to change the source of aggregates or asphalt cement, a new mix design shall be completed and submitted to the Contract Administrator for review and approval. This cost shall be the responsibility of the contractor.

.4 A Quality Control Plan (QCP) shall be submitted to the Contract Administrator at the preconstruction meeting. No paving will be permitted until the QCP has been approved by the Contract Administrator. The QCP shall include a monitoring procedure to confirm stockpile and plant aggregate gradations, determination of moisture content during production, gradation testing at start of production to confirm conformance to design mix and monitoring of mixing temperature.
The contractor shall employ qualified personnel, including at least one certified technician to implement and oversee the QCP.

.5 The Superpave™ design gyratory compactive effort shall be based on the following criteria which is selected for traffic volume of 3 to 30 million ESALs unless modified by the Contract Administrator.

Number of Gyrations

N-initial	8
N-design	100
N-maximum	160

.6 At least three (3) weeks prior to paving the contractor shall provide mix designs to the Contract Administrator for review and approval. An off-site test strip may be required to evaluate the workability, compactability, rolling patterns and in-situ mix properties. Test strips shall be a minimum of one (1) paver width by ten (10) metres long at the thickness required in the contract. The test strip shall be measured by the tonne as verified by weigh slips and paid for at the unit price bid per tonne. Perform evaluation of moisture sensitivity of design mixture in accordance with AASHTO T283, as per Superpave™ mix design requirements.

.7 During plant production, the gradation of the asphalt mix shall be tested. Samples shall be obtained at the plant both prior to and after the addition of the asphalt cement. Test results shall be made available as soon as possible to allow for adjustments to the process. The mixture properties shall be within the following tolerances of the design.

Gradation Tolerance (%)

4.75 mm sieve and larger	+/- 5
2.36 mm	+/- 4
0.600 mm	+/- 3
0.300 mm	+/- 2
0.075 mm	+/- 1.5

The aggregate gradation should not exceed the "Control Points" even if the aggregate is within the permissible tolerance limits.

In no case may the sample gradation curve cross the maximum density line in the restricted zone.

Mixture Properties Criteria

Asphalt Content % by total mix	$\pm$ 0.3
Air Voids %	4.0 $\pm$ 1.0

Voids in Mineral Aggregate:

For 19 mm Nom. Size %	13.0 min.
For 12.5 mm Nom. Size %	14.0 min.
Voids filled with Asphalt %	65 – 75
Dust Proportion	0.6 – 1.2"

3.5	Placing	Clause 3.5.4.3: Add "except for local residential streets where the maximum lift thickness for asphalt paving is 75 mm. Minimum lift thickness for surface course shall not be less than 35 mm for local residential streets and 50mm for other classes of roads."
3.6.1	Compaction	Add "For Superpave™ Asphalt the following shall apply: Roll asphalt continuously to a density between 94% to 96% of the Theoretical Maximum Relative Density of the mix. A minimum of four (4) out of five (5) consecutive density tests shall meet this criteria. No individual test shall be less than 92%. A Quality Control Plan (QCP) shall be submitted to the Contract Administrator prior to paving which shall include full details of the paving equipment, rate of placement, proposed rolling patterns for breakdown, intermediate and finishing rollers, in-situ density testing during and after compaction and monitoring of temperature of the asphalt mix in the trucks."

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3.7	Joints	Delete clause 3.7.5 in its entirety and Add: "Construct butt joints as directed in the field by the Contract Administrator."

2523 Concrete Walks, Curbs and Gutters

3.9	Expansion Joints	Delete: 3.9.1: Form transverse expansion joints at both ends of curb returns and at a maximum spacing of 9m for sidewalks, 9m for curb and gutter, at each end of driveway crossings and at tangent points on circular work. and replace with: Form transverse expansion joints at both ends of curb returns and at a maximum spacing of 9m for sidewalks, 30m for curb and gutter, at each end of driveway crossings and at tangent points on circular work and on either side of catchbasins.
3.9.4		Delete 3.9.4: Bond break compound may be used in lieu of expansion joint between sidewalk and back of abutting curb and gutter or where applicable between sidewalk and back of abutting utility strip or sidewalk infill. and replace with: Bond break compound may be used in lieu of expansion joint between sidewalk and back of abutting utility strip or sidewalk infill.

2666 Waterworks

1.0	**General**	
1.8	Measurement and Payment	Clause 1.8.1 and add: Refer to Coquitlam Supplementary Detail Drawings where available. Clause 1.8.5 Delete last sentence: Measurement for service connections will be for complete service installed, with no regard to the length of the service pipe installed. And replace with: Measurement for service connections will be made at the unit price bid in the tender form measured from the center of the main to the terminus of the service.
1.8.7		Amend Clause 1.8.5: Delete reference to Standard Detail Drawings W2a.
2.0	**Products**	
2.2	Mainline Pipe, Joints and Fittings	
2.2.1.1	Ductile Iron Pipe	Pipe: to AWWA C151, and shall meet the following Pressure Class or Thickness Class: - 100mm – 200mm – PC 350 or Thickness Class 50 - 250 mm and greater – Thickness Class 50
2.3	Valves and Valve Boxes	
2.3.1.4		Delete Clause 2.3.1.3: Gate valves 400 mm and larger to have gear operators. and replace with: Valves 400 mm and larger to be butterfly valves.
2.3.4		Delete Clause 2.3.4: Blowdown or Blow-Off Valves: 50mm to AWWA C800 for working pressure 1035 kPa threaded ends, 75 mm to 300 mm as specified for mainline gate valves. and replace with: Blowdown or Blow-Off Valves: 50 mm to 300 mm as specified for mainline gate valves.

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2.3.6.1.2		Delete 2.3.6.1.1 and 2.3.6.1.2 and replace with: Circular type to be MR Style valve box.
2.3.7.2		Delete 2.3.7.1 and 2.3.7.2 and replace with: Service valve boxes shall be as shown in Standard Detail drawing W2b. The circular type valve box shall be Nelson style PVC or cast iron in boulevard areas or MR Style in roadways.
2.3.7.3	Valves and Valve Boxes	Delete Clause 2.3.7.3: Curb stop valve boxes (300 mm from property line) alternative on 19 mm dia. to 50 mm dia. services without operating rods to be assembled as specified for Mainline Valve Boxes - 2.3.6.1.2 and 2.3.6.2. and replace with: Curb stop valve boxes (300 mm from property line) alternative on 19 mm dia. to 38 mm dia. services without operating rods to be assembled as specified for Mainline Valve Boxes - 2.3.6.1.2 and 2.3.6.2. and shown on Standard Detail Drawing W2b.
2.3.7.5		Delete Clause 2.3.7.5: Corporation stop valve boxes (at mainline tees or tappings) on services 75 mm dia. and larger as specified for Mainline Valve Boxes. and replace with: Corporation stop valve boxes (at mainline tees or tappings) on services 50 mm dia. and larger as specified for Mainline Valve Boxes per supplementary drawing Coq W2e and W2f.
2.5.1	Service Connections, Pipe, Joints and Fittings	Delete Clause 2.5.1: Pipe diameter 19 mm to 75 mm to be Polyethylene to AWWA C901, Pressure Class 160 tubing certified to CSA B137.1 or Type K annealed copper to ASTM B88M and replace with: Pipe diameter 19 mm to 75 mm to be Type K annealed copper to ASTM B88M.
2.8	Granular Pipe Bedding And Surround Material	Add Clause 2.8.3: Shall conform to Type 2 gradation.
3.0	**Execution**	
3.10.13	Service Connection Installation	Add Clause 3.10.13: Service connections off existing mains to be wet-tapped by the Contractor under the supervision of the Contract Administrator.
3.12	Hydrants	Clause 3.12.1 and add: Standard off-set from property line shall be 1.0 metres.
3.23	Connections to Existing Mains	Delete Clause 3.23.1: Connections to existing waterworks systems will be made by the Municipality. Make all necessary arrangements with the Contract Administrator to schedule work to prevent construction delays. and replace with: Connections to existing waterworks systems will be made by the Contractor under the supervision of the Contract Administrator. Make all necessary arrangements with the Contract Administrator to schedule work to prevent construction delays.

3.23.2		Add Clause 3.23.2: Provide written notification to all affected residents a minimum 24 hours prior to service interruption.
3.23.3		Add Clause 3.23.3: Arrange shutdown of the existing valves by the City. Contractor shall not operate any valves without prior approval of the Contract Administrator.
3.23.4		Add Clause 3.23.4: Provide temporary service while existing service is interrupted as detailed in Contract Drawings or Detailed Specifications.
3.23.5		Add Clause 3.23.5: Fittings used for tie ins should be cleaned of all foreign material and sprayed with a 1% hypochlorite solution prior to assembly. Disinfect all pipes and fittings installed at the connection.
3.23.6		Add Clause 3.23.6: Contractor shall be responsible for the costs for the City to flush and purge all air from existing mains and services in the area affected by the service interruption.

2721 Storms Sewers

1.0 General

1.6	Measurement for Payment	Clause 1.6.3 Delete last sentence: Measurement for service connections will be for complete service installed, with no regard to the length of the service pipe installed. and replace with: Service connections will be paid at the unit price bid per linear metre of service installed measured horizontally from the centreline of mainline to the capped end (exclusive of length of riser or inspection chamber). Connection to existing main and tie-in of existing service connection at property line will be incidental to payment for service connection. Payment includes scope defined in 1.6.2.
1.6.4		Delete last sentence: Payment includes all applicable work described in 1.6.2 and will be made under Section 2725 – 1.5.2. And replace with: Payment includes all applicable work described in 1.6.2 including riser pipe required and will be made at the unit price tendered for each inspection chamber installed.
1.6.9		Delete Clause 1.6.9: Tie-ins to existing storm sewer systems will be paid as lump sums for each tie-in shown on Contract Drawings and described on Form of Tender. and replace with: Tie-ins to existing storm sewer systems to be incidental to the payment items for storm sewer.

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2.0	**Products**	
2.4	Spiral Rib Pipe-Steel	This section shall only apply where Spiral Rib Pipe-Steel is specified in the contract plans and specifications.
2.5	Service Connections	2.5.1 Replace 100 minimum diameter with 150 minimum diameter.
2.5.8		Delete Clause 2.5.8: Connections to ribbed PVC pipe to be made with a preformed tee or wye fitting when connection is up to two sizes smaller than mainline pipe. For these pipes, in-situ installation of tees or wyes involving cutting across pipe ribs is not permitted. For connections more than two sizes smaller than mainline pipe, an insertable tee for ribbed PVC pipe is permitted. When an insertable tee is used, hole cut into mainline pipe to cut as few ribs as possible. and replace with: Connections to ribbed PVC pipe to be made with a manufactured wye fitting where wye locations are known in advance. For connections to ribbed PVC mainline pipe larger than 450 mm an insertable tee for ribbed PVC pipe is permitted for connections more than two sizes smaller than mainline pipe. When an insertable tee is used, hole cut into mainline pipe to cut as few ribs as possible
2.5.11		Add Clause 2.5.11: Insertable tee fitting shall have a rubber collar which inserts into the mainline pipe to form a tight seal and shall have stainless steel band to secure the tee insert. The tee insert shall be a standard bell end with depth control lugs. Add Clause 2.3.12: Rubber couplings for gravity sewers shall have stainless steel shear bands along the body of coupling.
2.7	Granular Pipe Bedding and Surround Material	Add Clause 2.7.3: Pipe bedding shall be 19 mm clear crushed rock or as approved by the Contract Administrator. Surround material above the springline within the pipe zone may be Type 2.

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3.0	**Execution**	
3.8	Connections to Existing Mainline Pipes	Add Clauses: Connections to existing mainlines 450 mm and smaller shall be made by removal of the section of the main and replacement with a manufactured PVC wye complete with stubs and double hub PVC couplings for PVC mains and approved shear band couplings for other mainline materials. Connections to existing concrete mainline and mainlines larger than 450 mm shall be made in accordance with this section and will be made using a core cutter. The Contractor shall video inspect all connections to existing mains following completion of the installation.
3.10	Service Connection Installation	Clause 3.10.1: Install service connections to 3.6 and as shown on Standard Detail Drawing S8.
3.10	Service Connection Installation	and add: Inspection chambers shall be provided on all storm service connections as per Standard Detail drawing S7
2725	**Manholes and Catchbasins**	
2.0	**Products**	
2.1	Materials	Delete Clause 2.1.11: Catchbasin leads to be minimum 150 mm diameter and of PVC DR35. and replace with: Catchbasin leads to be minimum 150 mm diameter PVC DR28. Catchbasin leads larger than 150 to be as specified for mainline.
3.3.15		Delete Clause 3.3.15: Install drop structures where required to Standard Detail Drawings S4. and replace with: Install drop structures where required to Supplementary Detail Drawings Coq S4 and Standard Detail Drawings S3. Maximum allowable inside ramp shall be 250mm invert to invert.
3.5.1	Catchbasin Installation	Delete Clause 3.5.1: Install catchbasins as shown on Standard Detail Drawing S11, to standards and installation procedures described on 3.3. and replace with: Install catchbasins as shown on Supplementary Detail Drawing Coq S11A, Coq S11B and Standard Detail Drawing S11, to standards and installation procedures described on 3.3.

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2731 Sanitary Sewers

1.0 General

1.6	Measurement and Payment	Clause 1.6.3 Delete last sentence: Measurement for service connections will be for complete service installed, with no regard to the length of the service pipe installed. and replace with: Service connections will be paid at the unit price bid per linear metre of service installed measured horizontally from the centreline of mainline to the capped end (exclusive of length of riser or inspection chamber). Connection to existing main and tie-in of existing service connection at property line will be incidental to payment for service connection. Payment includes scope defined in 1.6.2.
1.6.4		Delete last sentence: Payment includes all applicable work described in 1.6.2 and will be made under Section 2725 – 1.5.2. and replace with: Payment includes all applicable work described in 1.6.2 including riser pipe required and will be made at the unit price tendered for each inspection chamber installed.

2.0 Products

2.1	Concrete Pipe	Clause 2.1.1: Non-reinforced concrete pipe and fittings: to ASTM C14M maximum diameter 675 mm, strength class as shown on Contract Drawings, designed for flexible rubber gaskets joints to ASTM C443M. and add: Prior approval of the Contract Administrator required for use of concrete pipe in sanitary sewer installations.
2.3	Service Connections	Add Clause 2.3.11: Service connections to existing mains shall be made with an extrusion molded PVC wye and approved couplings or, where approved by the Contract Administrator, by coring the mainline pipe and installation of an approved sewer saddle. The contractor shall video inspect all connections to existing mains following completion of the installation. Add Clause 2.3.12: Rubber couplings for gravity sewers shall have stainless steel shear bands along the body of coupling.
2.5	Granular Pipe Bedding and Surround Material	Add Clause 2.5.3: Pipe bedding shall be 19 mm clear crushed rock or as approved by the Contract Administrator. Surround material above the springline within the pipe zone may be Type 2.

2732 Sewerage Forcemains

2.0 Products

2.5	Granular Bedding and Pipe Surround Material	Delete Clause 2.5.1: As shown on Contract Drawings and replace with: Shall be Type 1 or Type 2 as per Section 2226, 2.7.1.

3.0 Execution

3.5 Granular Bedding

Delete Clause 3.5.7: Use imported bedding when proposed work is installed through paved areas, when native material is deemed unsuitable for backfill by Contract Administrator or when trench has been excavated in rock.

and replace with: Bedding shall be Type 1 or Type 2 as per Section 2226, 2.7.1.

2831 Chain Link Fences and Gates

2.0 Product

2.1.3 Materials

Delete Clause 2.1.3: Chain-link fence fabric: 9 gauge (3.55 mm diameter) 50 mm mesh, galvanized, plastic coated or electro galvanized as specified in Contract Documents.

and replace with:

.3 Chain Link Fence Fabric: to CAN\CGSB-138.1.

.1 Baseball Backstop:
6 gauge black vinyl coated steel wire woven into 50x50 mm size mesh on the first 3048 mm of backstop;
9 gauge black vinyl coated steel wire woven into 50x50 mm size mesh on the top 7696 mm of backstop;
9 gauge black vinyl coated steel wire woven into 50x50 mm size mesh on the 1500 mm of 45 degree overhang;

.2 Soccer Backstop:
6 gauge black vinyl coated steel wire woven into 50x50 mm size mesh on the first 2400 mm of backstop;
9 gauge black vinyl coated steel wire woven into 50x50 mm size mesh on the top 2400 mm of backstop;

.3 Linear Fence:
9 gauge black vinyl coated steel wire woven into 50x50 mm size mesh.

.4 Tennis and Sport Courts Fences:
9 gauge green vinyl coated steel wire woven into 44x44 mm size mesh.

2.1.3

2.1.13

Add Clause 2.1.13: Connections: Fence connections to all be welded construction and coped fitted.

3.0 Execution

3.2.17 Installation of Fence

Add Clause 3.2.17: Form and pour a 300 mm wide by 100 mm deep float finished concrete apron (mow strip) under all fencing located in grass areas.

SUPPLEMENTARY SPECIFICATIONS

Revision Date: July 24/2003

2921 Topsoil and Finish Grading

1.0 General

1.1.6	Related Work	Add Clause 1.1.6: Shrubs and Tree Preservation Section 02104
1.3.2	Source Quality Control	Delete Clause 1.3.2: Contractor is responsible for soil analysis and requirements for amendments to supply growing medium as specified. and replace with: The Owner is responsible for the cost of initial testing of the planting soil. The Contractor shall submit the soil test results to the Contract Administrator for approval of the proposed material prior to placing of the planting soil on site. The test results shall determine soil amendment requirements. Testing shall be carried out by independent laboratory specializing in soil analysis.
2.0	Products	Add Clause 2.1.2: All materials and execution shall conform to the latest edition of the BCSLA\BCNTA British Columbia Landscape Standard following standards or as otherwise specified herein.
3.4.6	Placing Growing Medium	Add Clause 3.4.6: Scarify soil, feather grades and remove noxious weeds from the edge of tree preservation areas.

2933 Seeding

2.0 Products

2.1.2	Grass Seed	Delete Clause 2.1.2: Seed mixtures to be approved by Contract Administrator and to be suited to climate, terrain, establishment and maintenance conditions under which they are to be grown. and replace with 2.1.2: Seed mixtures to be approved by Contract Administrator in the original packaging. The seed mixture for boulevard and landscaped areas shall be made up from a minimum of three (3) varieties of Perennial Rye, two (2) varieties of Kentucky Bluegrass and three (3) varieties of Fescue from the list of approved varieties shown below. .1 Seed mix: 60% Perennial Rye Grass: Elka; Saturn; Barclay; Omega II 25% Chewing Fescue: Cindy; Enjoy; Koket 15% Kentucky Blue Grass: Shammrock; Geronomio; Merit

3.0 Execution

3.2.3.1	Seeding - General	Add Clause 3.2.3.1 For Seeded Areas: The components of each of the mix shall be to the following; or as indicated by the supplier's specifications: Mixture per ha Turf Seed 225 kg. Fertilizer (19-19-19) 225 kg.
3.7.1.1	Conditions for Total Performance	Add Clause 3.7.1.8: The prime consideration for acceptance of work of this section shall be the establishment of a dense, uniform cover of growth over 100% of all seeded areas.

SUPPLEMENTARY SPECIFICATIONS

Revision Date: July 24/2003

2934 Hydraulic Seeding

2.0 Products

2.1.2 Grass Seed

Delete Clause 2.1.2: Seed mixtures to be approved by Contract Administrator and to be suited to climate, terrain, establishment and maintenance conditions under which they are to be grown.

and replace with: Seed mixtures to be approved by Contract Administrator in the original packaging. The seed mixture shall be made up from a minimum of three (3) varieties of Perennial Rye, two (2) varieties of Kentucky Bluegrass and three (3) varieties of Fescue from the list of approved varieties shown below.

.1 Seed mix:

60% Perennial Rye Grass: Elka; Saturn; Barclay; Omega II
25% Chewing Fescue: Cindy; Enjoy; Koket
15% Kentucky Blue Grass: Shammrock; Geronomio; Merit

3.0 Execution

3.2.2.1 Seeding - General

Add Clause 3.2.2.1: For Hydroseeded Grass Lawn: The components of each complete slurry mix shall be to the following; or as indicated by the supplier's specifications:

Mixture	**per ha.**
Turf Seed	225 kg.
Mulch	225 kg.
Tackifier	70 kg.
Fertilizer (19-19-19)	225 kg.
Water	10,000 l.

3.8.7 Grass Maintenance

Add Clause 3.8.7: Any hydroseeded areas that show deterioration, bare spots, rutted areas, or eroded areas shall be immediately repaired by application of additional growing medium and reseeded with a seed mix that matches the originally specified seed mix. Add sod to eroded areas if required or as directed by the Contract Administrator to prevent further erosion.

3.8.8

Add Clause 3.8.8: All hydroseeded areas shall be adequately protected with warning signs, temporary fencing or other means.

3.9.1 Conditions for Total Performance

Add Clause 3.9.1.8: The prime consideration for acceptance of work of this section shall be the establishment of a dense, uniform cover of growth over 100% of all seeded areas.

2938 Sodding

3.0 Execution

3.2.5 Sodding

Delete Clause 3.2.5: Lay sod smooth and flush with adjoining grass areas and paving and top surface of curbs unless shown otherwise on Contract Drawings.

and replace with: Lay sod smooth and flush with adjoining grass areas and paving and top surface of curbs unless shown otherwise on Contract Drawings. Ensure there is a full roll width between the new sod and adjoining surfaces. Small cut pieces from a full roll will not be accepted.

3.2.12	Sodding	Delete Clause 3.2.12: Water sod area immediately with sufficient amounts to saturate sod and upper 100 mm of growing medium. and add: Water sod area immediately with sufficient amounts to saturate sod and upper 100 mm of growing medium. Do not allow the sod to dry out so that the joints become visible.
3.5.1.8	Conditions for Total Performance	Add Clause 3.5.1.8: The prime consideration for acceptance of work of this section shall be the establishment of a dense, uniform cover of growth over 100% of all seeded areas.

2950 Planting of Trees, Shrubs and Groundcovers

1.0 General

1.0.3	Qualifications	Add Clause 1.0.3: All materials and execution shall conform to the latest edition of the following standards or as otherwise specified: · BCSLA/BCNTA British Columbia Landscape Standard · BCNTA Standard for container grown stock · CNTA Landscape Canada Metric Guide Specifications for Nursery Stock · American Standard for Nursery Stock
1.1.6	Related Work	Add Clause 1.1.6: Shrubs & Tree Preservation - Section 02104.
1.4	Scheduling	Re-number clauses 1.4.1, 1.4.2 and 1.4.3 as 1.4.2, 1.4.3 and 1.4.4 respectively. Add new clause 1.4.1 Tree planting must not commence until the Manager issues written permission to proceed. The Manager may refuse to issue permission to proceed with planting of trees required under the Subdivision and Development Servicing Bylaw until building construction on the development, or on the lots created by the subdivision, is 90% complete or such earlier time as the Manager may determine. Schedule planting of trees between October 1 and May 31 unless otherwise approved by the Manager.

2.0 Products

2.1	Plant Materials	Delete 2.1.2.1 and replace with: All plant material to be nursery grown stock and meet BCSLA/BCNTA standards. All plants to be ball and burlap, machine dug into wire basket or container grown stock. Bare root trees are not acceptable. Trees shall be 8 to 10 cm caliper with a rootball diameter of 80 cm to 1.0 m and depth of 80 to 90 cm. Delete 2.1.2.4
2.13.1	Premixed Planting Soil	Add Clause 2.13.1: Premix soil for backfilling tree planting pits to be: 50% excavated native material removed from tree planting pits 50% planting soil as specified in Section 02921, Planting Soil and Finish Grading. Thoroughly mix components prior to backfilling tree pits.

SUPPLEMENTARY SPECIFICATIONS

Revision Date: July 24/2003

3.0	**Execution**	
3.3	Planting	3.3.3 add: Unless otherwise indicated on approved drawings, trees are to be planted on the centre line of the boulevard. Where trenches are offset from boulevard centre line, the trench must be widened to plant trees on the centre line. The trench widening will be no more than 300 mm on each side of the root ball to minimize the reduction in compacted fill supporting curbs and sidewalks.
3.3.4.2		Add Clause 3.3.4.5: For wire cage rootballs, cut away top rootball ties and fold back top portion of wire cage so it does not protrude through backfill soil when finish graded.
3.3.4.5		Add Clause 3.3.4.5: The Contractor shall take all necessary measures to ensure tree holes are free draining. Inform Contract Administrator if tree hole is not free draining. Backfill with pre-mixed planting soil, to bring the plant material to the depth they were originally growing.
3.7.1	Mulching	Delete Clause 3.7.1: Immediately after all planting is complete and finish grading approved by Contract Administrator place bark mulch in even layers. and replace with: After finish grading is complete and all debris or weeds have been removed, place bark mulch inside tree planting saucer in an even layer that shall be 75 mm in depth after settling. Apply an application of ammonium nitrate or ammonium sulfate at the time of planting.
3.7.2	Mulching	Delete Clause 3.7.2: Ensure minimum depth of bark mulch 50 mm after settlement. and replace with: Ensure minimum depth of bark mulch 75 mm after settlement.
3.7.3	Mulching	Add Clause 3.7.3: Mulch material that is susceptible to blowing must be moistened and mixed with topsoil before applying. When mulching is placed in fall, place immediately after planting. When mulch is placed in spring, wait until soil has warmed up.
3.10	Conditions for Total Performance	Add: 3.0.1.10: A letter of assurance has been submitted from the Landscape Architect hired by the Owner as required in section 10.03 of the Bylaw certifying he or she has carried out the function of Contract Administrator as required by this specification and that all materials is, and all work has been completed, in accordance with the Bylaw and approved design drawings and that conditions 3.10.1.1 to 3.10.1.9 applied at the time of certification.
3.11	Guarantee/ Maintenance	Delete 3.11.1 and replace with: The guarantee period shall be for one full growing season following planting.

SUPPLEMENTARY SPECIFICATIONS

Revision Date: July 24/2003

2960 Irrigation

1.0 General

.1 Section 02960 refers to those portions of the work that are unique to the supply and installation of irrigation systems, controllers, valves, automatic valves, valve boxes and related appurtenances. This section must be referenced to and interpreted simultaneously with all other Sections pertinent to the works described herein.

.2 All details of irrigation facilities not specifically covered in this Section to comply with the Irrigation Industry Association of British Columbia Standard.

1.2 Related work:

.1	Site Grading	Section 02210
.2	Topsoil and Finish Grading	Section 02921
.3	Planting of Trees Shrubs & Groundcovers	Section 02950

1.3 Qualifications

.1 The Contractor shall be members of the Irrigation Association of B.C.

.2 The Contractor shall employ personnel familiar with proper irrigation procedures, under the supervision of a qualified foreman.

1.4 Materials Certification

.1 Products having CSA certification to be used where readily available. Certification by Standards Council of Canada approved independent third body that products conform to CSA standards is acceptable in lieu of CSA certification.

.2 At least two weeks prior to commencing work, submit manufacturer's recent test data and certification that materials to be incorporated into works are representative and meet requirements of this Section.

1.5 Submittals:

.1 Record Drawings:

.1 The Contract Administrator will furnish the Contractor with one set of prints of the Irrigation Drawings showing all sprinkler work required under this Contract, for the purpose of having the Contractor record as-built details for changes that may have been made during actual installation of the system. Immediately upon installation of any piping, valves, wiring, sprinkler heads, etc., in locations other than indicated, the Contractor shall clearly indicate such changes on this drawing and provide details as necessary to produce record drawings.

.2 After final acceptance of the works, the Contractor shall be responsible for having drawings and details prepared in AutoCAD format showing all such changes and these shall be turned over to the Owner for recording purposes. The drawings shall be at the same scale as the originals and to be reproducible sepia in accordance to Section 01721.

.2 Manual:

.1 Provide a service manual showing all parts breakdown for each different components of the irrigation system as well as maintenance procedures.

1.6 Instruction:

.1 Provide services of a competent instructor to inform the City's maintenance personnel of irrigation system operation.

1.7 Measurement and Payment

.1 Supply and installation of irrigation works will be paid as a lump sum unless otherwise shown in the Form of Tender.

.2 Irrigation lump sum price(s) shall include all labour, equipment and materials required to complete installation as shown on the Contract Drawings and as described in the Contract Documents.

2.0 - Products

2.1 Materials:

.1 Wherever such terms as "as per manufacturer's specifications" is used, it shall mean in strict accordance with the manufacturer's printed directions. If these directions conflict with this Specification, the matter shall be brought to the attention of the Contract Administrator for resolution prior to proceeding with the work.

.2 All materials shall be new and in perfect condition.

2.2 Pipe, Joints and Fittings:

.1 Polyvinyl Chloride (PVC) Pressure Pipe

.1 All PVC mainline piping shall be Series 160 manufactured to CSA B137.3.

.2 All PVC sprinkler piping downstream of valves shall be Class 200 Polyvinyl-Chloride (PVC), 1120 conforming to requirements of CSA B137.3.

.2 High Density Polyethylene Pipe:

.1 To AWWA C906, Series 160 or to pressure class shown on the Contract Drawings.

2.3 Plastic Pipe Fittings And Connections:

.1 Plastic pipe fittings to be installed shall be moulded fittings manufactured of the same material as the pipe and shall be suitable for solvent weld, slip joint ring tight seal, thermo-fusion or screwed connections.

.2 Nipples and fittings shall be schedule 40 PVC unless otherwise designated on the standard detail drawings.

2.4 Brass Pipe and Fittings

.1 Brass pipe and fittings shall be schedule 40.

2.5 PVC Solvent Connections:

.1 Solvent and primers shall be as per manufacturers specifications for type of pipe used.

2.6 Main Valves:

.1 All gate valves, ball valves, corporation stops and curb stops shall be to Section 2666 Waterworks, 2.0 Products.

2.7 Automatic Control Valves:

.1 Control valves are to be 24 volt, 60 cycle, 2 watt normally closed solenoid, Rainbird PEB series, or approved equivalent.

.2 Control valves shall operate with 18 to 30 volts power at the solenoid. Operator valve shall have a screen protection to filter grits or fines, etc. and shall be accessible from the top.

2.8 Back-Flow Preventer:

.1 Double check back-flow preventer valve shall be to CSA B64.5 and shall be a Watts Model 007-QT or approved equivalent. The back-flow preventer must have brass ball valves on either side for isolation and testing. All exposed pipe and fittings shall be brass. Installation shall be as shown on supplementary drawings.

2.9 Valve Boxes:

.1 Valve boxes, blow out connections, main shut off valves, etc. shall be installed in valve boxes as shown on the detail specification drawings suitable in size to permit ease of maintenance of the enclosed item. Boxes shall be Carson series 1419 or AE Concrete model 5686 approved equal and shall be predrilled for the sensor pad. All valve boxes, drain boxes or access boxes shall be installed so the top of said structure is at the finished grade.

2.10 Sprinkler Heads

.1 Sprinkler heads shall be of the types and sizes with the diameter of radius of throw, pressure and discharge as indicated on the Contract Drawings. All heads of a particular type and for a particular function in the system shall be of the same make and model with identifying markings in such a position that they can be identified without being removed from the system.

2.11 Sprinkler Risers

.1 All rotor pop-up sprinklers shall have an adjustable riser assembly (triple swing joint riser) assembled by the use of at least (3) standard 90 degree street elbows as recommended by the sprinkler manufacturer and/or as shown on the standard detail drawings.

.2 All shrub heads to be installed on Schedule 80 PVC nipples with 2 PVC street elbows connecting nipple to lateral line. Use of Marlex street elbows is not acceptable.

.3 Other nipples of the swing joint riser shall be the size and length required for proper installation of the sprinkler head, drain valve and/or automatic control valve.

2.12 Automatic Controllers:

.1 Automatic controllers shall be 110 volt power input and 26.5 volt, 60 cycle power output, Rainbird solid state RCMB series, Hardie TC-18-EXB, or approved equivalent.

.2 Automatic controllers located outside shall be encased in a sturdy, lockable, weatherproof aluminium mounting box manufactured by Vancouver Electric Box Company or approved equivalent as shown on supplementary detail drawing.

2.13 Wiring

.1 Wiring to be used for connecting the automatic controllers shall be T.W.U. - minus 40 #14 solid copper conductor installed in accordance with B.C. Electrical Codes.

.2 Wire splices shall be King Brothers CSA waterproof connectors. Splices shall only be made in the valve boxes.

.3 All wiring shall be buried a minimum of 300mm below grade, unless installed in conduit.

2.14 Water Meter

.1 Water meter shall be a Sensus Touch Read or Neptune Pro Read or approved equivalent as per the City of Coquitlam Water Meter Specifications. The meter shall be installed to measure water used for the irrigation system only.

2.15 Blowout Valve:

.1 Blowout valve shall be the quick coupler valve model: Rainbird No.5 RC or approved equivalent.

3.0 - Execution

3.1 Layout of Sprinkler System:

.1 Staking of sprinkler system shall be done by the Contractor in accordance to the Contract Drawings and as approved by the Contract Administrator.

3.2 Trench Excavation:

.1 Pipe shall be installed with a minimum of 300 mm of cover for all lateral piping and 450mm for all mainline piping.

.2 Trenches shall be free from rock, debris or sharp particles. Backfilling shall be accomplished in a manner to ensure no future settlement of the ditch and damage of the pipe.

.3 The Contractor shall be responsible for repairing all trench settlement during the maintenance period.

.4 The Contractor may have the option of installing the pipe with a pipe puller subject to approval of the pulling equipment by the Contract Administrator. Puller shall be of the "Mechanical Mole" type which permits creation of an underground void sufficient in size to allow pipe to be pulled back and forth without difficulty prior to surface disturbance.

.5 A vibratory plow may be used if depth of pipe can be met.

.6 Trenches bottoms shall be straight with a uniform slopes and pipe laid on firm soil at all points.

3.3 Installation of Pipe and Sleeves:

.1 All piping and materials shall be installed in accordance with the manufacturer's specifications and as specified herein.

.2 PVC pipe ends shall be cut 90 degrees to the pipe length and cleaned of all cutting burrs prior to cementing. Pipe ends shall be wiped clean with a dauber wetted with PVC primer. Cement shall be applied with a light coat on the inside of the fitting and a heavier coat on the outside of the pipe. Pipe shall be inserted into the fitting and given a quarter turn to set the cement. Excess cement shall be wiped from the outside of the pipe.

.4 Threaded connections shall have four (4) full wraps of Teflon tape.

.5 Sleeves shall be installed by the Contractor for all lines under paved areas with a minimum cover of 450 mm (18"). For main lines, PVC sleeves shall be three pipe sizes larger, for lateral lines, PVC sleeves shall be two pipe sizes larger.

.6 Main and supply lines may occupy same trench as sprinkler lines, a minimum horizontal clearance of 150mm shall be maintained.

.7 Irrigation lines shall not run directly over, or touch, another irrigation line or piping. This requirement does not apply to any lines crossing at angles from 45 to 90 degrees with each other. A minimum 25 mm vertical clearance shall be maintained between lines which cross between these angles.

.8 Irrigation lines shall have a minimum horizontal clearance of 300 mm and a minimum vertical clearance of 150 mm from other services.

3.4 Balancing System:

.1 The Contractor shall balance and adjust the various components of the sprinkler system to maximize the efficiency of the system. This includes synchronization of the controllers, adjustment of pressure regulators, pressure relief valves, part-circle sprinkler heads and individual station adjustment on the controllers.

3.5 Installation and Adjustment of Sprinkler Heads Location:

.1 Rotary sprinklers shall not be installed until all mains and lateral lines have been thoroughly flushed. Flushing shall be accomplished in such a manner to insure adequate pressure and water velocity at any head location being flushed. The swing joints shall be snug and free from leaks. Any joint evidencing leaking shall be removed, re-taped and reinstalled. Where leaking continues on any joint, the faulty nipples and/or elbow shall be removed from the joint and not be re-used elsewhere on the project.

.2 Spray heads shall be installed on a Triple Swing Joint and set flush with grade. Triple Swing Joint shall be comprised of a minimum of three schedule 40 PVC Street Ells and one schedule 80 PVC Nipple as per supplementary drawings.

.3 Quick coupler valves shall be installed on swing joint assemblies and set flush with grade. Swing joint assembly shall be comprised of a minimum of two schedule 40 PVC Street Ells elbow (threaded), one schedule 40 PVC nipple (length to suit), one brass threaded elbow, one brass threaded street elbow, and one brass 6" riser.

.4 Minor changes in sprinkler head locations to ensure adequate coverage shall be made by the contractor as requested by the Contract Administrator at no additional cost to the Contract.

.5 Sprinkler assemblies shall be carefully backfilled and compacted to prevent settling. The sprinkler heads shall be mounted flush to the ground to prevent any damage from maintenance equipment.

3.6 Controller Installation:

.1 The Contractor shall install the irrigation controller as shown on the Contract drawings and in the location to be determined by the Contract Administrator. The automatic controller shall be easily accessible for maintenance.

.2 The Contractor is responsible for all low voltage wiring to the controller. The City will connect 110 volt power supply to the irrigation controller

3.7 Testing And Inspection

.1 Testing: The Contractor is responsible for testing all pipe and sprinklers as follows:

.1 After the pipe is in place, in the bottom of the trench, with risers in place, cap the risers where the sprinklers will be attached and leave all pipe couplings and fittings exposed.

.2 Apply a pressure of 0.551 Mpa (80psi) to each section, using a test pump and calibrated container. Maintain test pressure for 24 hours. Inspect visually for leaks at the couplings and fittings, cut out and replace faulty connections. Retest system for one hour and note any pressure loss, locate and repair defective sections until zero pressure loss achieved.

3.8 Backfilling:

.1 Prior to backfilling, all lines, valves and fittings shall be inspected by the Contract Inspector and the appropriate authority where required.

.2 After system is operating and required tests have been made backfill excavations with clean soil, free of rubbish.

.3 Backfill trenches in accordance with Section 02223, Excavating, Trenching and Backfilling.

.4 Backfill material 150 mm above crown of all pipe shall have a maximum size of 12 mm in diameter

.5 Remaining backfill shall have a maximum size of 25 mm in diameter.

.6 Dress off all areas to finished grades.

3.9 Connection to City System:

.1 The Contractor shall connect to the downstream side of the City's curb stop or gate valve and install the water meter, backflow preventer and main control shut off valve as shown on the Contract Drawings and in these supplementary specifications.

3.10 Flushing:

.1 The entire sprinkler irrigation system shall be thoroughly flushed with water diverted to remove all direct, scale, and foreign matter of any nature before installing sprinkler heads.

3.11 Winterization:

.1 The Contractor shall winterize of the entire system at the end of the first season. The main control valve is to be closed and a hose from a 100 or 125 CFM compressor shall be attached to quick couple valve on the downstream side of the backflow preventer. Allow compressed air to flow into the system and open each solenoid valve individually to allow the water to be expelled from the system. Valves must be opened at least twice to insure all water is expelled from the system. After all water is expelled from all portions of the system close off the air supply and relieve air pressure from the system.

3.12 Start-up

.1 Contractor shall provide start-up of system the following Spring after winterization. The main control valve shall be turned on and the system allowed to fill slowly. Each zone valve shall be opened individually and each sprinkler head checked to confirm proper operation. The irrigation controller shall be adjusted to the correct time of day and appropriate watering time required as directed by the Contract Administrator. The Contractor shall review the system operation and make any adjustments necessary insure proper operation.

END OF SECTION

SUPPLEMENTARY DETAIL DRAWINGS

City of Coquitlam

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March 30, 2015

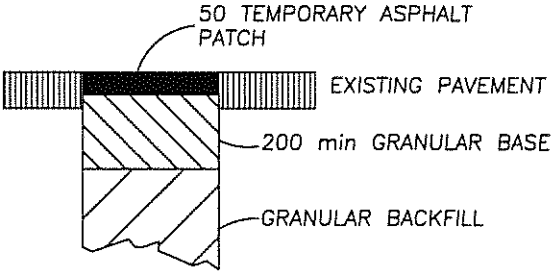
City of Coquitlam
Supplementary Specifications
and Detail Drawings
to the MMCD 2000 Edition

The City of Coquitlam has adopted The Master Municipal Specifications for use on all Engineering Works Contracts. To bring the MMCD Specifications into conformance to practices within the City, the following Supplementary Specifications and Detail Drawings are to be considered part of the Specifications. These Supplementary Specifications take precedence over the Master Municipal Specifications.

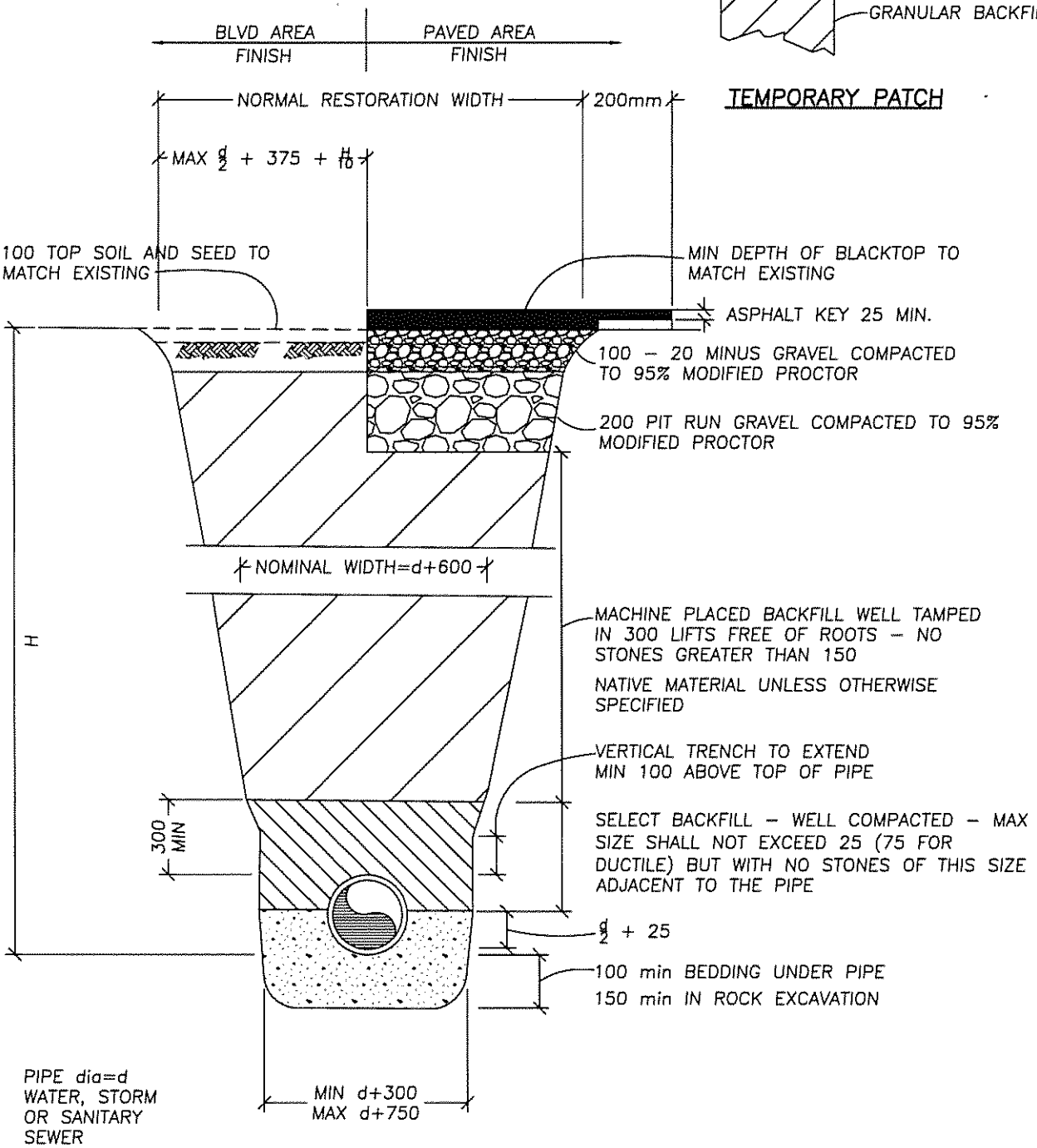
ALL DIMENSIONS IN MILLIMETRES

d = PIPE DIA IN mm

H = TRENCH DEPTH IN mm



TEMPORARY PATCH

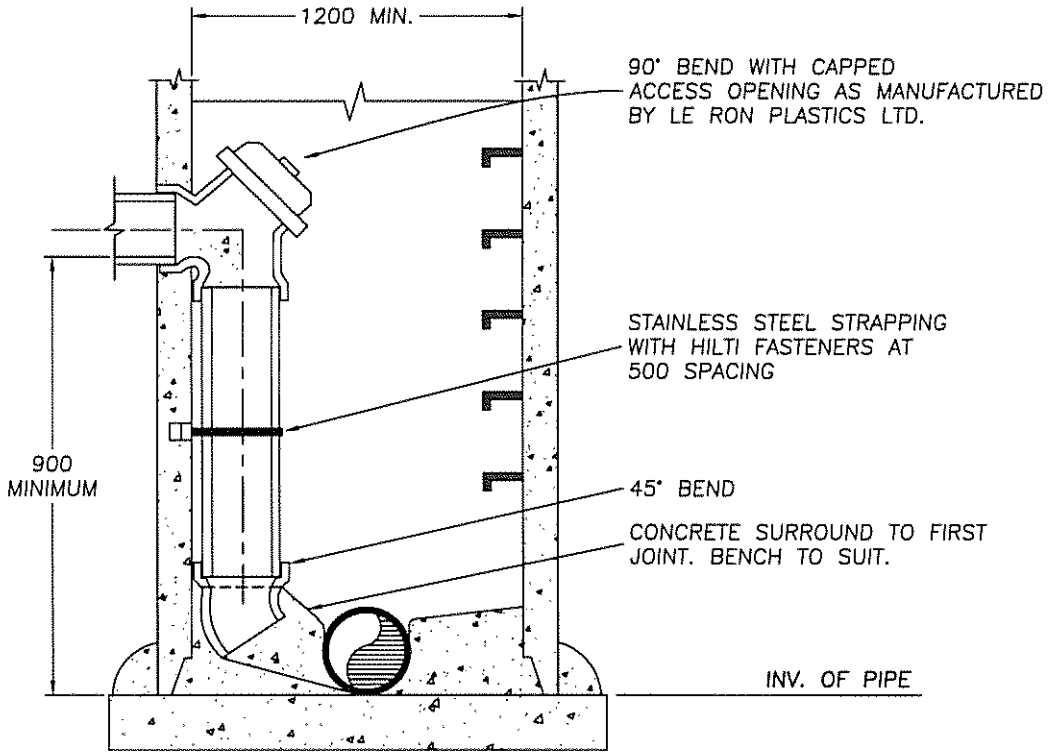

BLVD AREA FINISH
PAVED AREA FINISH
NORMAL RESTORATION WIDTH
200mm
MAX d/2 + 375 + H/10
100 TOP SOIL AND SEED TO MATCH EXISTING
MIN DEPTH OF BLACKTOP TO MATCH EXISTING
ASPHALT KEY 25 MIN.
100 – 20 MINUS GRAVEL COMPACTED TO 95% MODIFIED PROCTOR
200 PIT RUN GRAVEL COMPACTED TO 95% MODIFIED PROCTOR
NOMINAL WIDTH=d+600
H
MACHINE PLACED BACKFILL WELL TAMPED IN 300 LIFTS FREE OF ROOTS – NO STONES GREATER THAN 150
NATIVE MATERIAL UNLESS OTHERWISE SPECIFIED
VERTICAL TRENCH TO EXTEND MIN 100 ABOVE TOP OF PIPE
300 MIN
SELECT BACKFILL – WELL COMPACTED – MAX SIZE SHALL NOT EXCEED 25 (75 FOR DUCTILE) BUT WITH NO STONES OF THIS SIZE ADJACENT TO THE PIPE
d/2 + 25
100 min BEDDING UNDER PIPE
150 min IN ROCK EXCAVATION
PIPE dia=d
WATER, STORM OR SANITARY SEWER
MIN d+300
MAX d+750

City of Coquitlam

TRENCH DETAILS FOR STANDARD SECTION

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: JUN 12/02		DRAWING NO.: COQ-G4			

FILE: COQ-G4.dwg


1200 MIN.
90° BEND WITH CAPPED ACCESS OPENING AS MANUFACTURED BY LE RON PLASTICS LTD.
STAINLESS STEEL STRAPPING WITH HILTI FASTENERS AT 500 SPACING
900 MINIMUM
45° BEND
CONCRETE SURROUND TO FIRST JOINT. BENCH TO SUIT.
INV. OF PIPE

INSIDE DROP TYPE

NOTE:

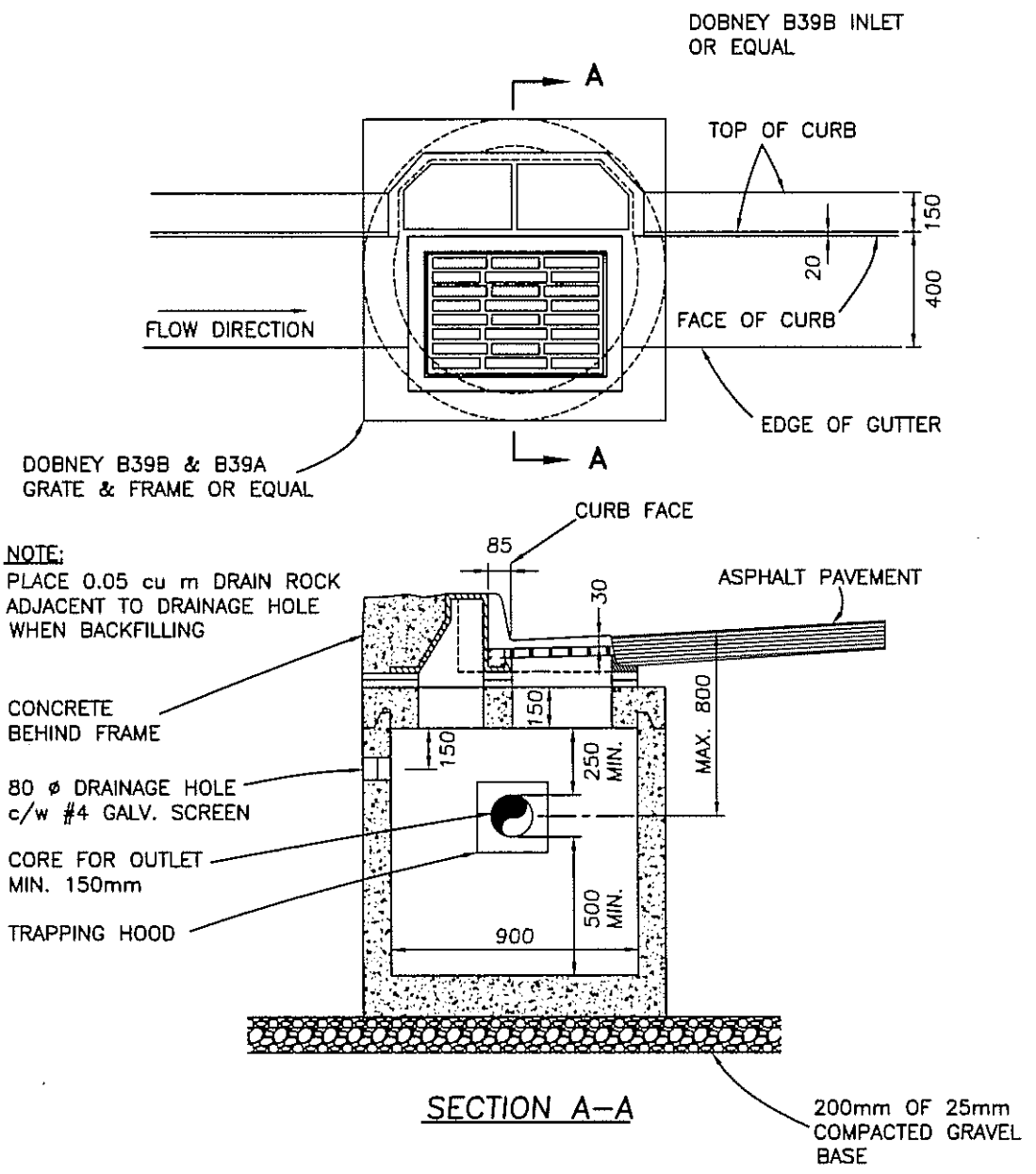
1. INSIDE DROP TO BE USED ONLY WHERE SPECIFIED BY ENGINEER.
2. ALL INSIDE PIPE AND FITTINGS PVC DR 28/35.
3. THIS DRAWING SHOWS INSIDE DROP ONLY. SEE DRAWING COQ–S1 FOR ALL OTHER DETAILS PERTAINING TO MANHOLE REQUIREMENTS.
4. REFER TO CONTRACT DRAWINGS AND SECTION 02725 FOR DETAILED SPECIFICATIONS.

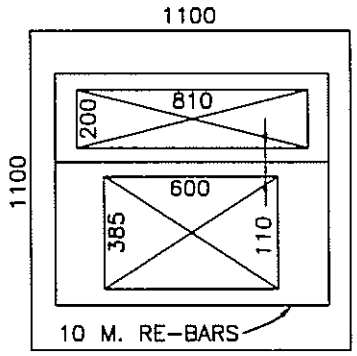
FILE: Coq–s4.dwg

City of Coquitlam

INSIDE DROP MANHOLE

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 3/97		DRAWING NO.: COQ–S4			





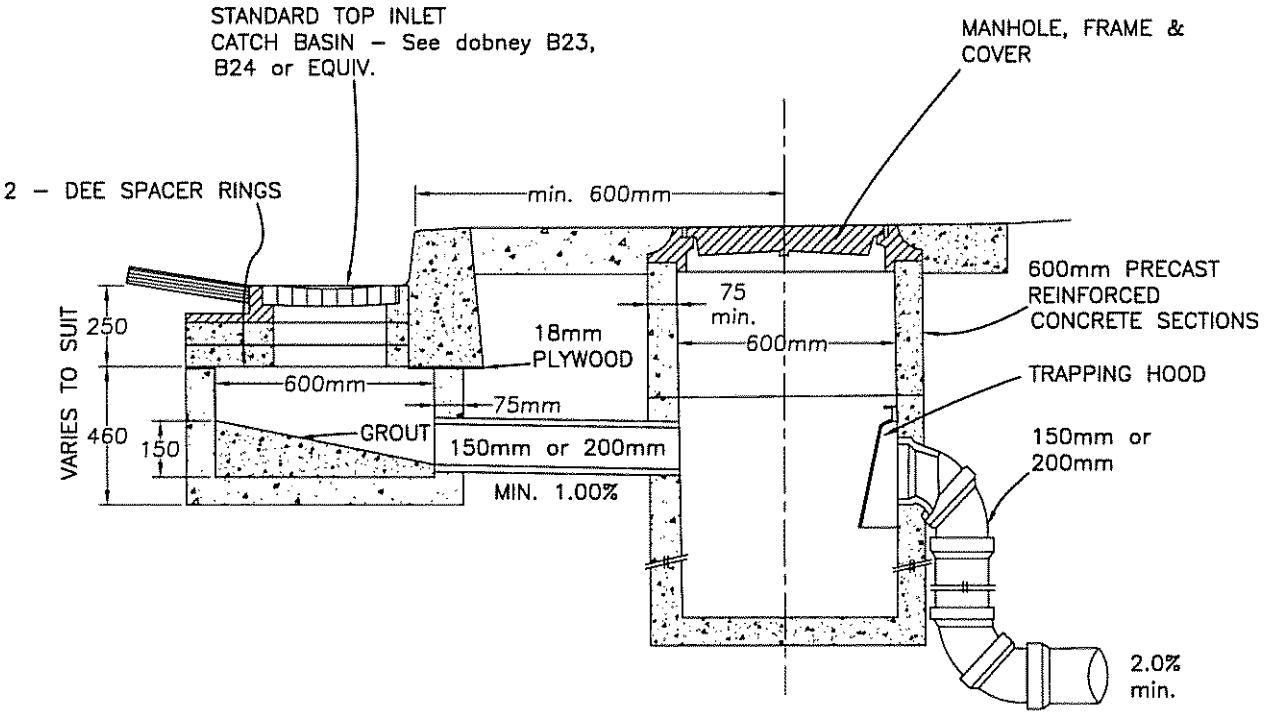
CONCRETE LID DETAILS

City of Coquitlam

SIDE INLET CATCH BASIN ASSEMBLY

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: MC	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: AUG 7/97		DRAWING NO.: COQ–S11A			

FILE: Coq-s11a.dwg

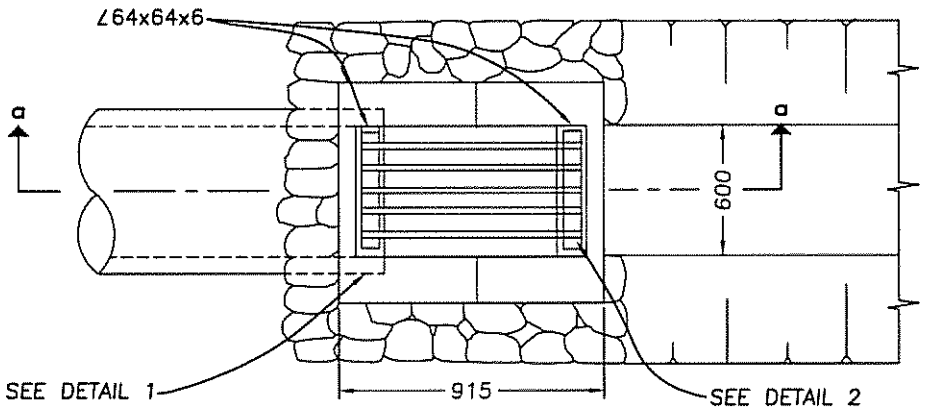


City of Coquitlam

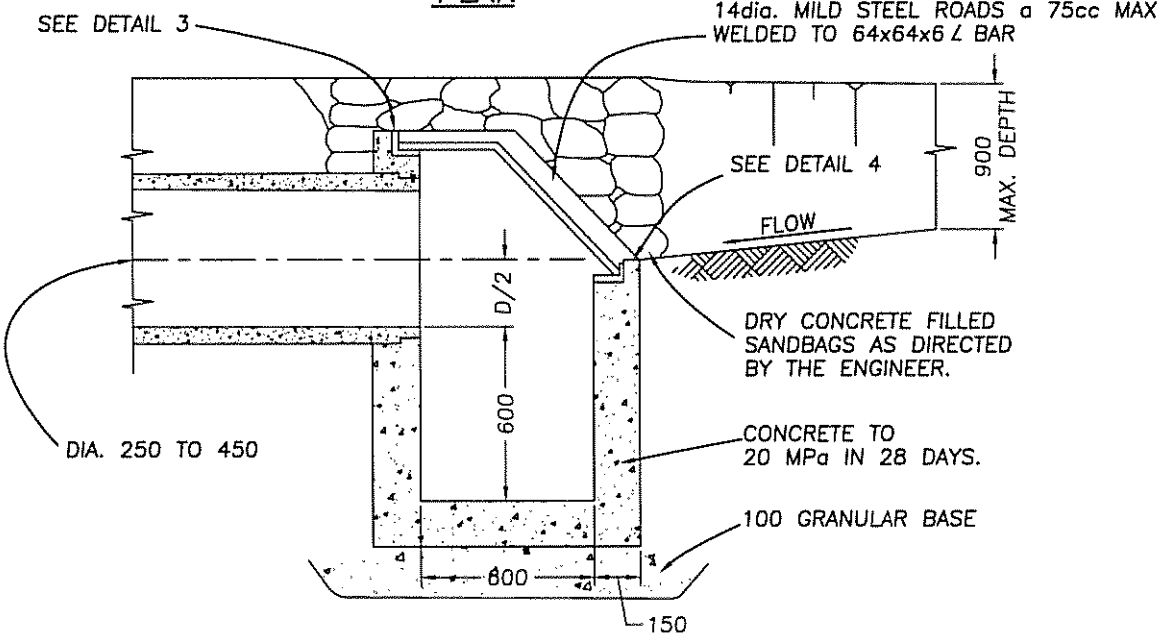
TYPICAL TOP INLET CATCH BASIN WITH OFFSET SUMP

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: MC	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: AUG 8/97		DRAWING NO.: COQ–S11B			

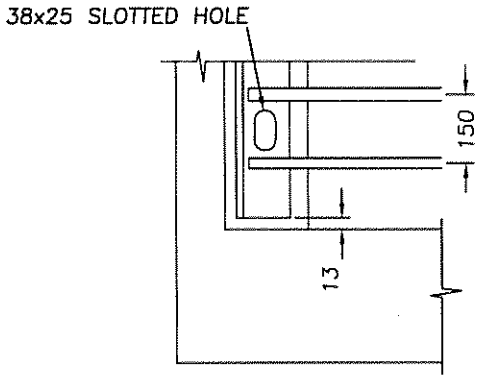
FILE: Coq–s11b.dwg



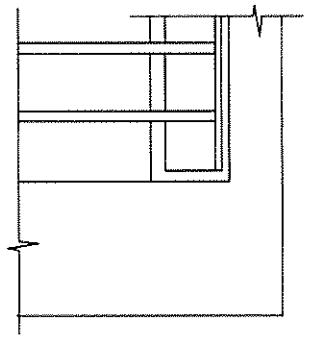
PLAN



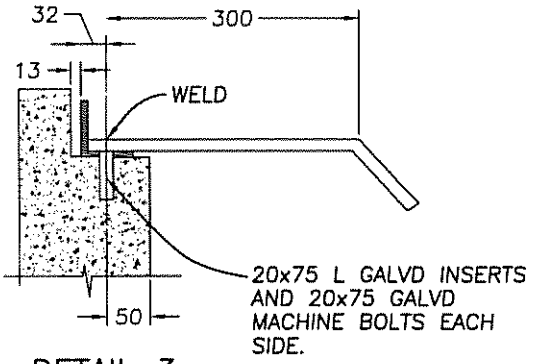
SECTION a–a



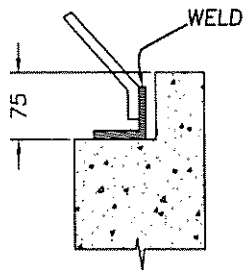
DETAIL 1



DETAIL 2



DETAIL 3



DETAIL 4

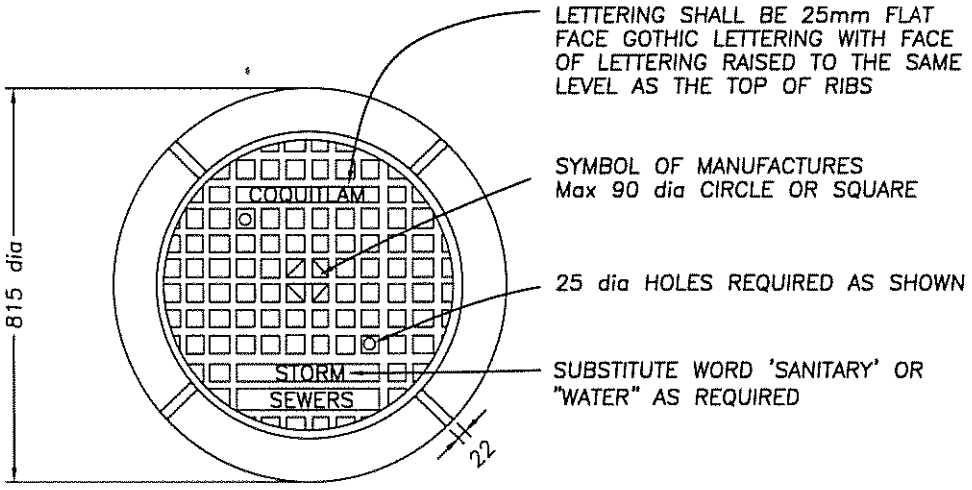
FILE: Coq-s13a.dwg

City of Coquitlam

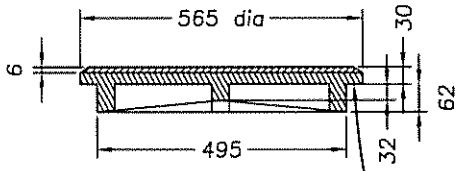
STORM SEWER DITCH INLET

For Use In Drainage Ditches With Inlet Pipe Diametre from 250mm to 450mm

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: MC	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: AUG 8/97		DRAWING NO.: COQ-S13A			

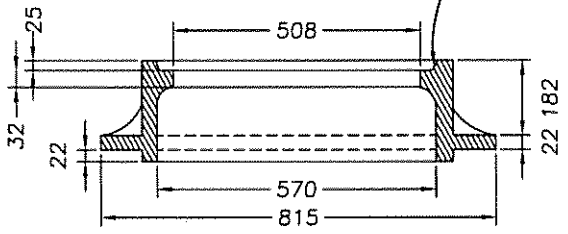

LETTERING SHALL BE 25mm FLAT FACE GOTHIC LETTERING WITH FACE OF LETTERING RAISED TO THE SAME LEVEL AS THE TOP OF RIBS
SYMBOL OF MANUFACTURES Max 90 dia CIRCLE OR SQUARE
25 dia HOLES REQUIRED AS SHOWN
SUBSTITUTE WORD 'SANITARY' OR "WATER" AS REQUIRED
815 dia
COQUITLAM
STORM
SEWERS
22

PLAN



COVER

MACHINE SURFACE FOR NON-ROCKING FIT -ALLOW 5mm FOR RAISED FACE



FRAME

APPROX. WEIGHT

COVER 60-65 kg

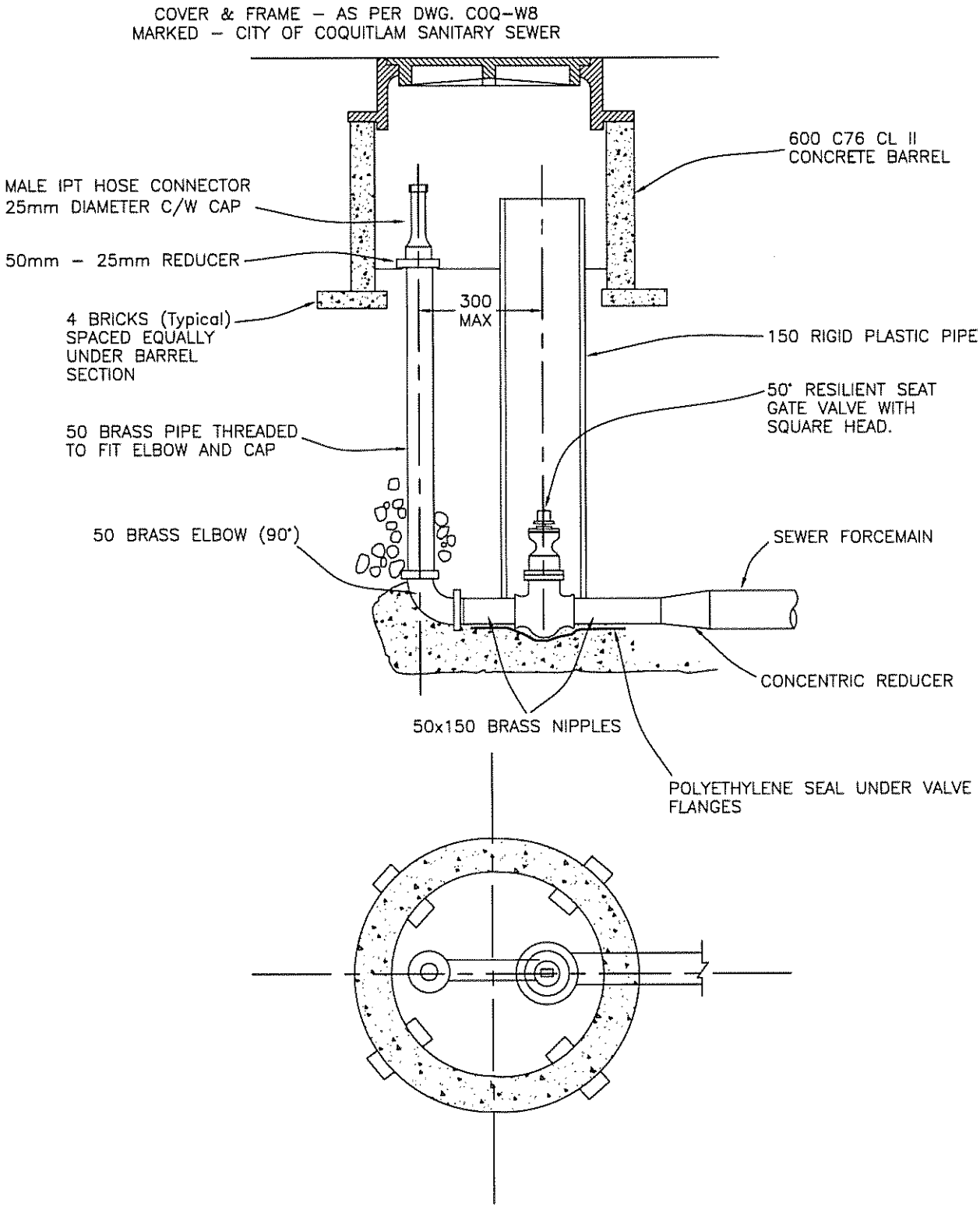
FRAME 100-110 kg

City of Coquitlam

MANHOLE COVER & FRAME

minor text changes			1	06/02		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 16/97		DRAWING NO.: COQ-S16			

FILE: Coq-s16.dwg

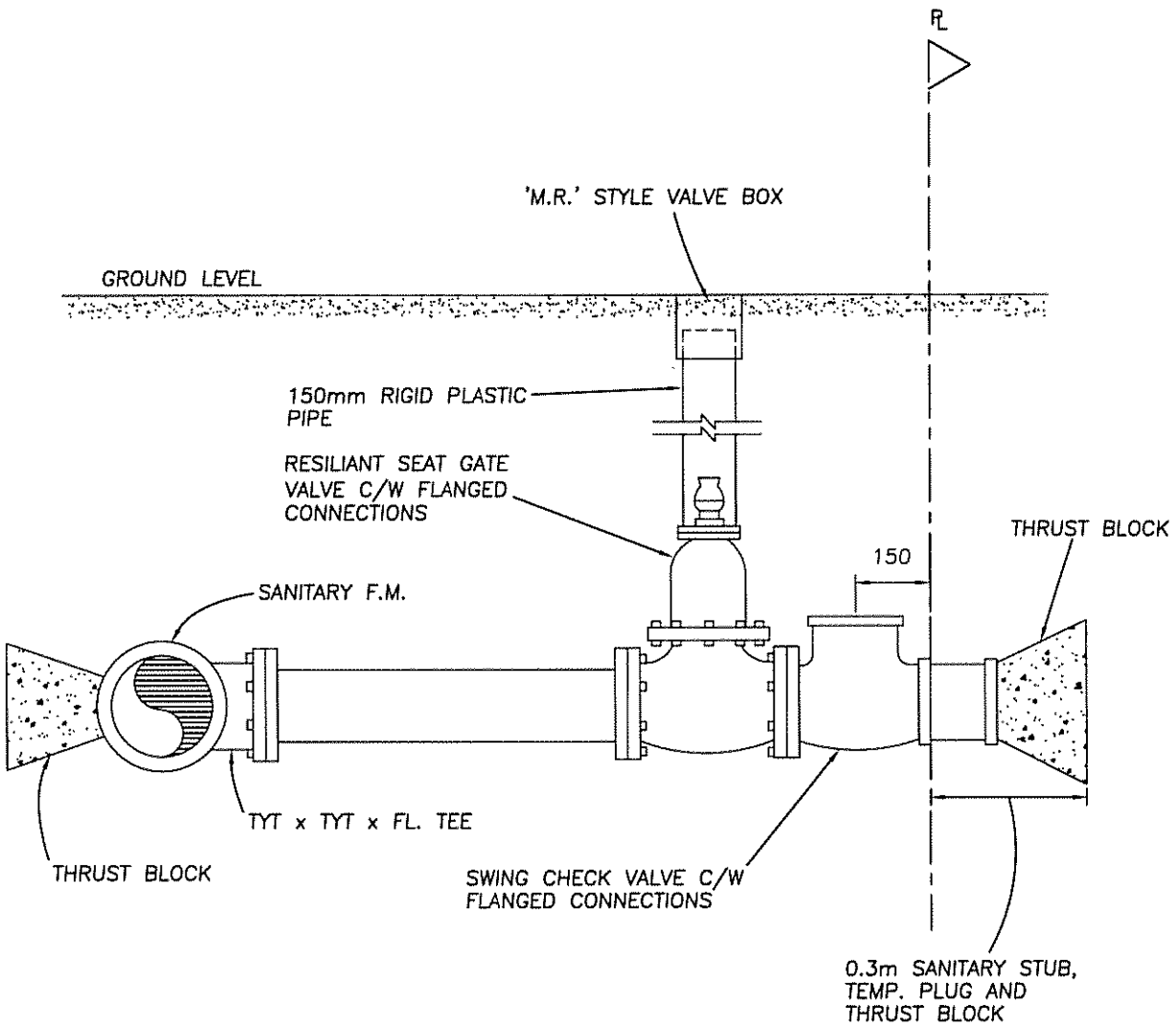


City of Coquitlam

FORCEMAIN FLUSHOUT DETAILS

CONNECTOR/REDUCER CHANGED			1	02/03		L.M.
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: JUN 17 02		DRAWING NO.: COQ–S17			

FILE: Coq-s17rev1.dwg

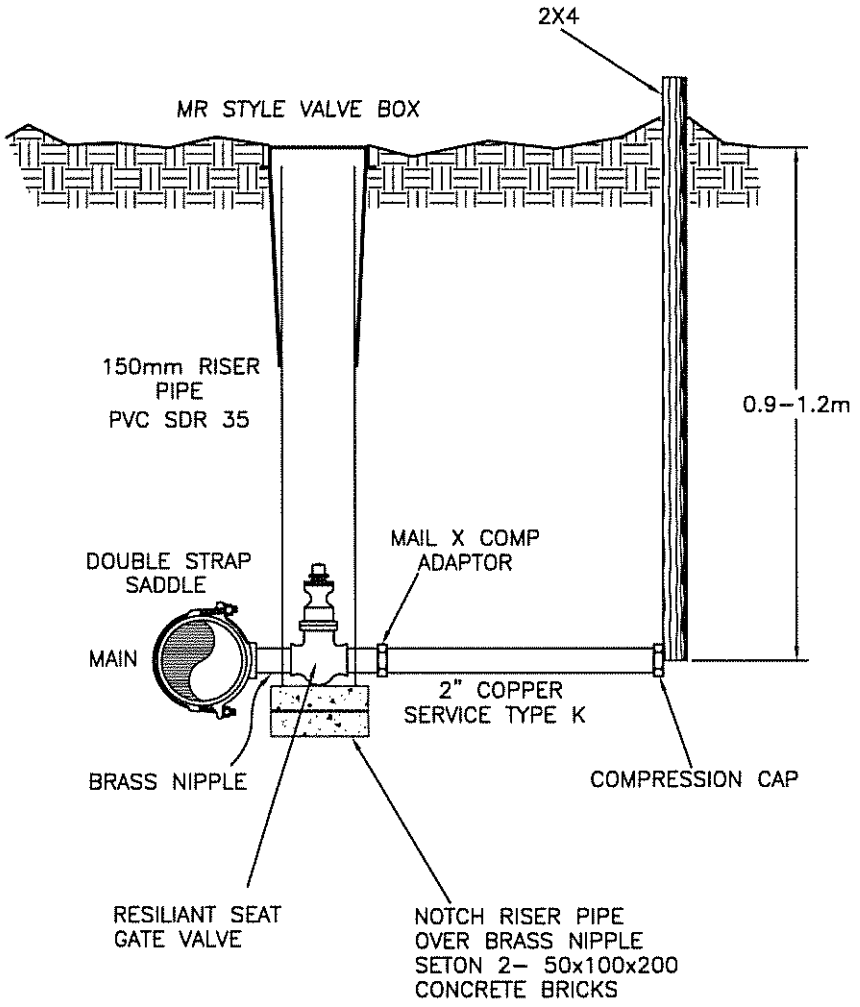


City of Coquitlam

FORCEMAIN
Service Connection Detail

minor text changes			1	06/02		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 20/97		DRAWING NO.: COQ-S18			

FILE: Coq--s18.dwg

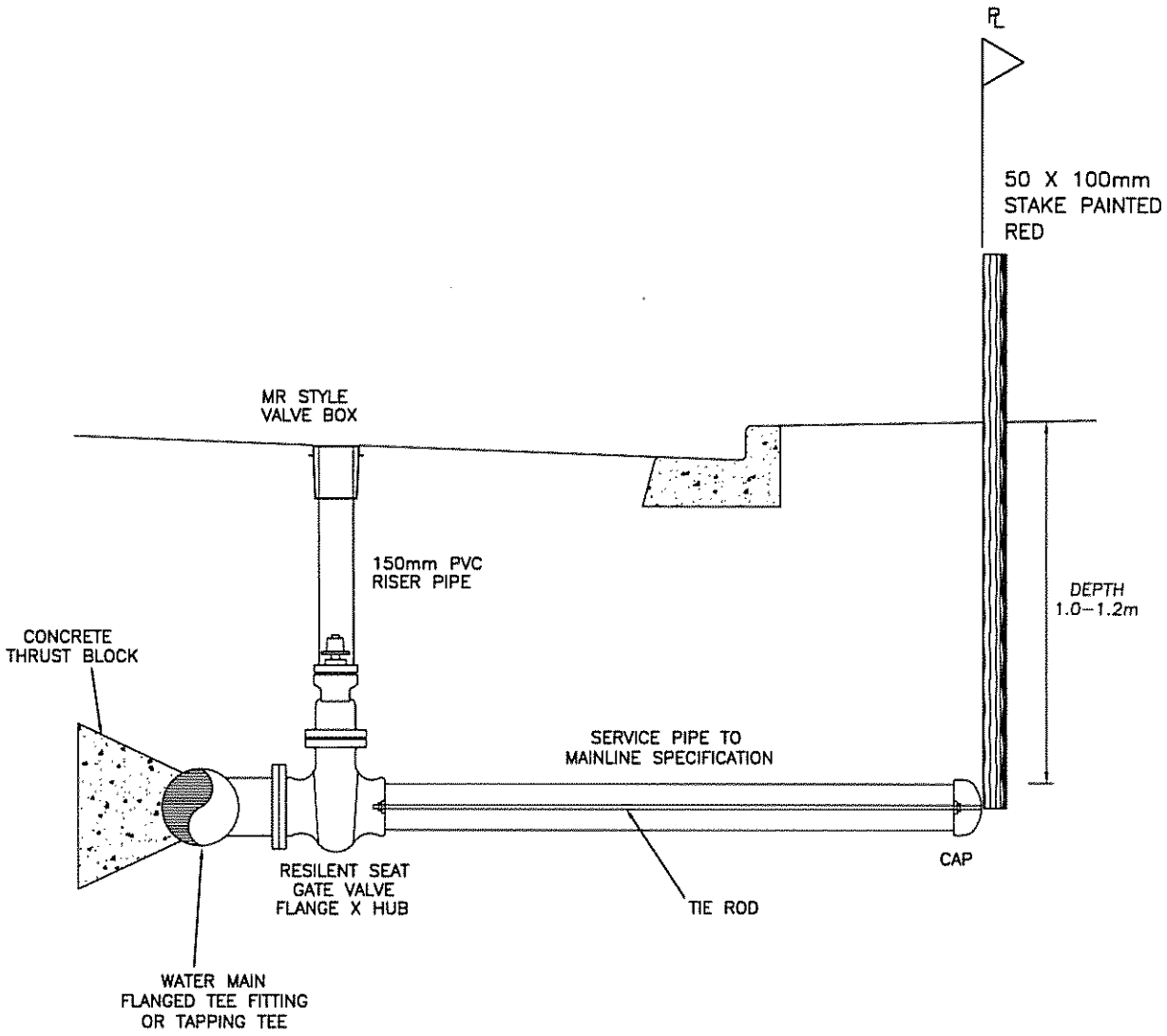


City of Coquitlam

Typical 50 mm Service

minor text changes			1	06/02		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: MC	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 18/07/97		DRAWING NO.: COQ–W2E			

FILE: Coq–w2E.dwg



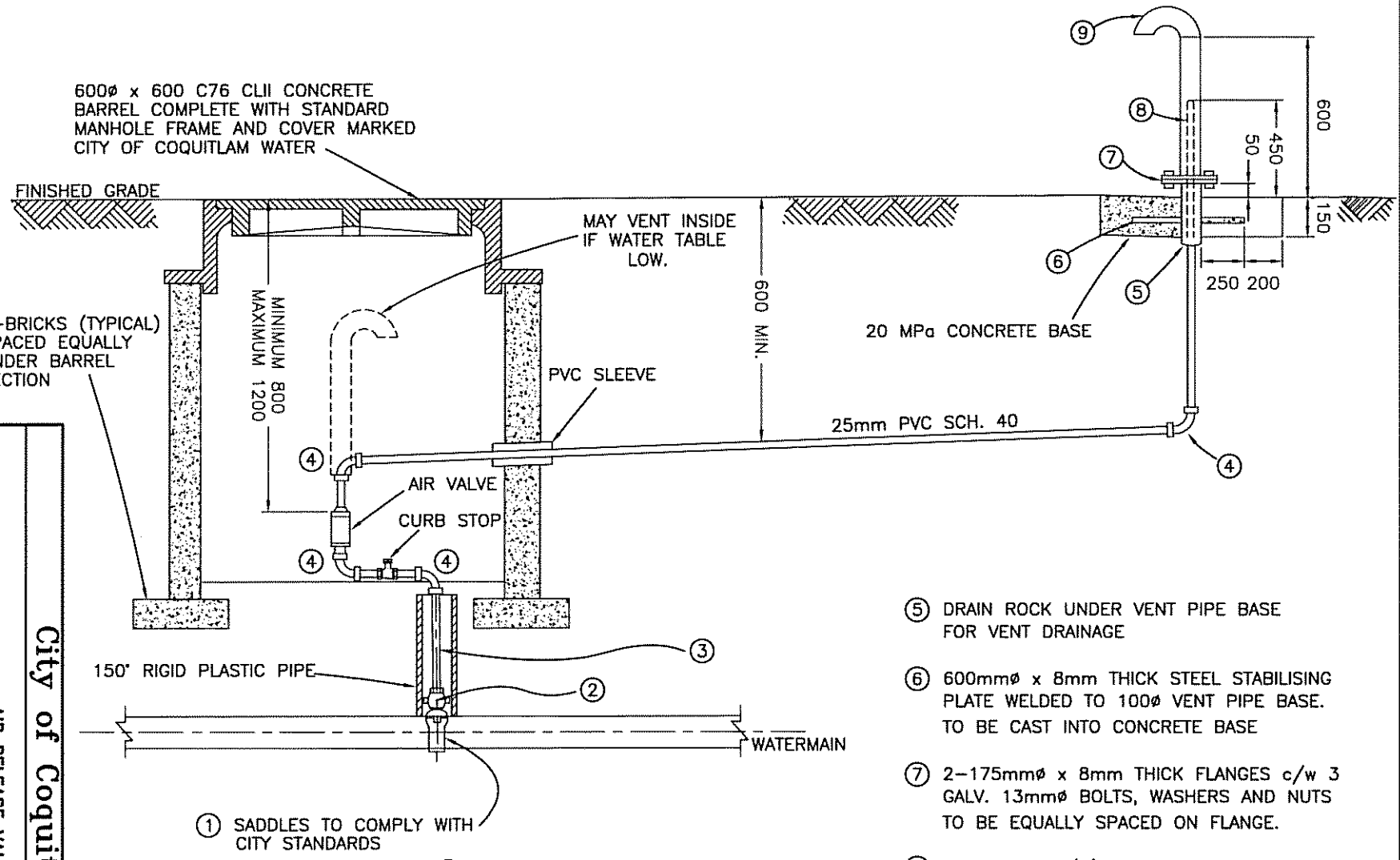
City of Coquitlam

Typical Service Connection
100mm Diameter and Greater

drawing # change			1	06/02		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: MC	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: AUG 5/97		DRAWING NO.: COQ–W2F			

FILE: Coq–w2F.dwg

FILE: coq-w6.dwg



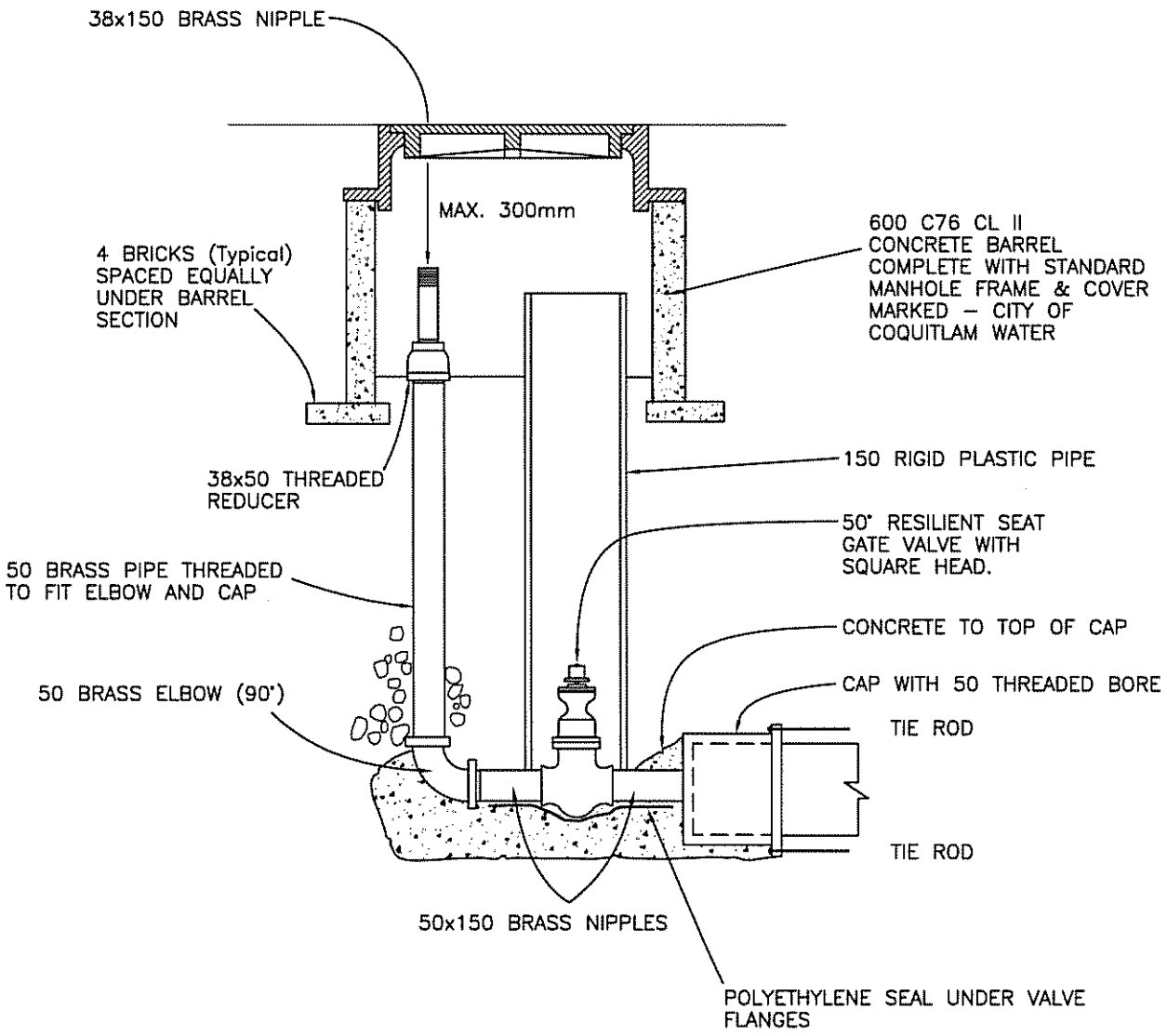
1. DOUBLE STRAP SADDLE SIZE TO SUIT.
2. 50mmø BRASS CORPORATION COCK MUELLER (H-15028) M.I.P. THREAD x C.
3. 25 dia BRASS VENT PIPE
4. 25mm ø 90° BEND. THREADED BRASS.
5. DRAIN ROCK UNDER VENT PIPE BASE FOR VENT DRAINAGE
6. 600mmø x 8mm THICK STEEL STABILISING PLATE WELDED TO 100ø VENT PIPE BASE. TO BE CAST INTO CONCRETE BASE
7. 2-175mmø x 8mm THICK FLANGES c/w 3 GALV. 13mmø BOLTS, WASHERS AND NUTS TO BE EQUALLY SPACED ON FLANGE.
8. 50mmø TYPE 'K' HARD COPPER PIPE TO PROTRUDE 450mm INTO 100mmø VENT PIPE
9. 100mmø STEEL VENT PIPE c/w 180° BEND WITH 13mm x 13mm x 1.6mmø WOVEN STAINLESS STEEL MESH WELDED INTO END. LOCATE APPROX. 2.0m MIN. FROM FACE OF CURB TO ℄ OF VENT PIPE. FINAL LOCATION TO ENGINEER APPROVAL.

City of Coquitlam

AIR RELEASE VALVE

SCALE:	N.T.S.
DATE:	JAN 19/98
DESIGNED BY:	
DRAWN BY:	A.S.K.
CHECKED BY:	
APPROVED BY:	
DRAWING NO.:	COQ-W6

REVISIONS				
No.	DATE:	CKD.	APP.	


38x150 BRASS NIPPLE
MAX. 300mm
4 BRICKS (Typical) SPACED EQUALLY UNDER BARREL SECTION
600 C76 CL II CONCRETE BARREL COMPLETE WITH STANDARD MANHOLE FRAME & COVER MARKED – CITY OF COQUITLAM WATER
38x50 THREADED REDUCER
150 RIGID PLASTIC PIPE
50° RESILIENT SEAT GATE VALVE WITH SQUARE HEAD.
50 BRASS PIPE THREADED TO FIT ELBOW AND CAP
CONCRETE TO TOP OF CAP
CAP WITH 50 THREADED BORE
50 BRASS ELBOW (90°)
TIE ROD
TIE ROD
50x150 BRASS NIPPLES
POLYETHYLENE SEAL UNDER VALVE FLANGES

City of Coquitlam

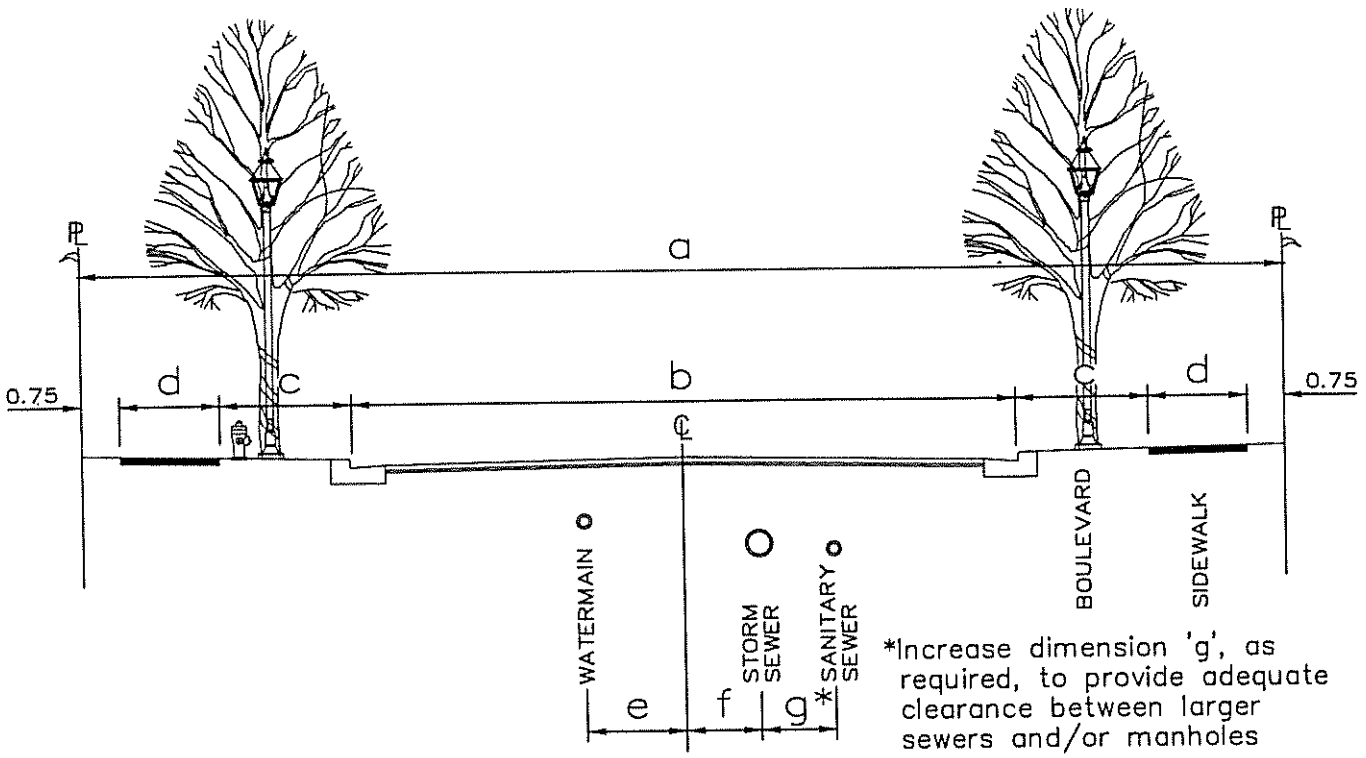
TYPICAL WATERMAIN BLOW-OFF ASSEMBLY

tie rods, minor text changes			1	06/02		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 21/97		DRAWING NO.: COQ-W8			

FILE: Coq-w8.dwg

Coquitlam

STANDARD DETAIL DRAWINGS



ROAD, SIDEWALK AND BOULEVARD DIMENSIONS

Street type	RoW width a	Curb to Curb width[1] b	Vehicle lanes	Bike facility[2]	Vehicle Volume	Parking[3]	Boulevard c	Sidewalk[4] d	e	f	g*
City Aterial/MRN (with Bike Route)	27.0m	14.0 – 16.1m	varies	separate or MUP	>15,000	not desirable OR pocket in blvd (2x2.7m)	2x2.7	2x2.0	5.25	4.75	1.0
City Arterial/MRN (w/o Bike Route)	27.0m	14.0m+	4x3.5	n/a	>15,000	not desirable	2x2.7	2x2.0	5.25	4.75	1.0
						OR pocket in blvd (2x2.7m)	2x4.2	2x2.0	5.25	4.75	1.0

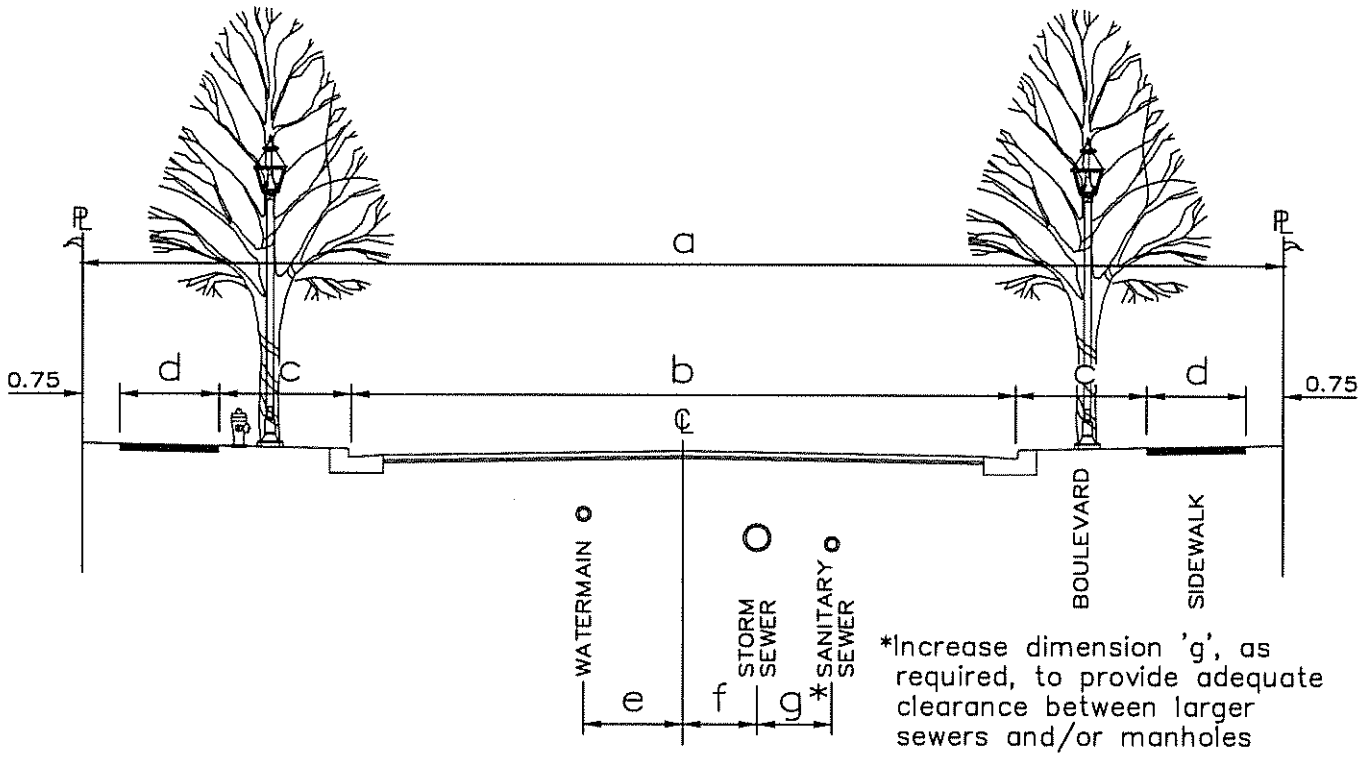
1. Representative of mid-block sections, auxiliary lane(s) at intersections are not included. Up to 5.0m of additional ROW may be required.
2. Bicycle facilities are to be implemented on designated routes in accordance with the Strategic Transportation Plan and OCP/Neighborhood Plans (as amended).
3. Parking is for general guidance and in commercial retail areas only. Parking may be restricted on one or both sides of the street for all periods or certain periods of the day at the discretion of the City.
4. Utility corridor varies between sidewalk/multi use pathway and property line. Utility corridors are located under sidewalks fronting urban commercial uses.

PLOTTED: 22-Jan-15

ARTERIAL STREETS	DATE: JAN/2015	DRAWING NUMBER: COQ-R2A
	DRAWN: REY	
	SCALE: N.T.S.	

Coquitlam

STANDARD DETAIL DRAWINGS



*Increase dimension 'g', as required, to provide adequate clearance between larger sewers and/or manholes

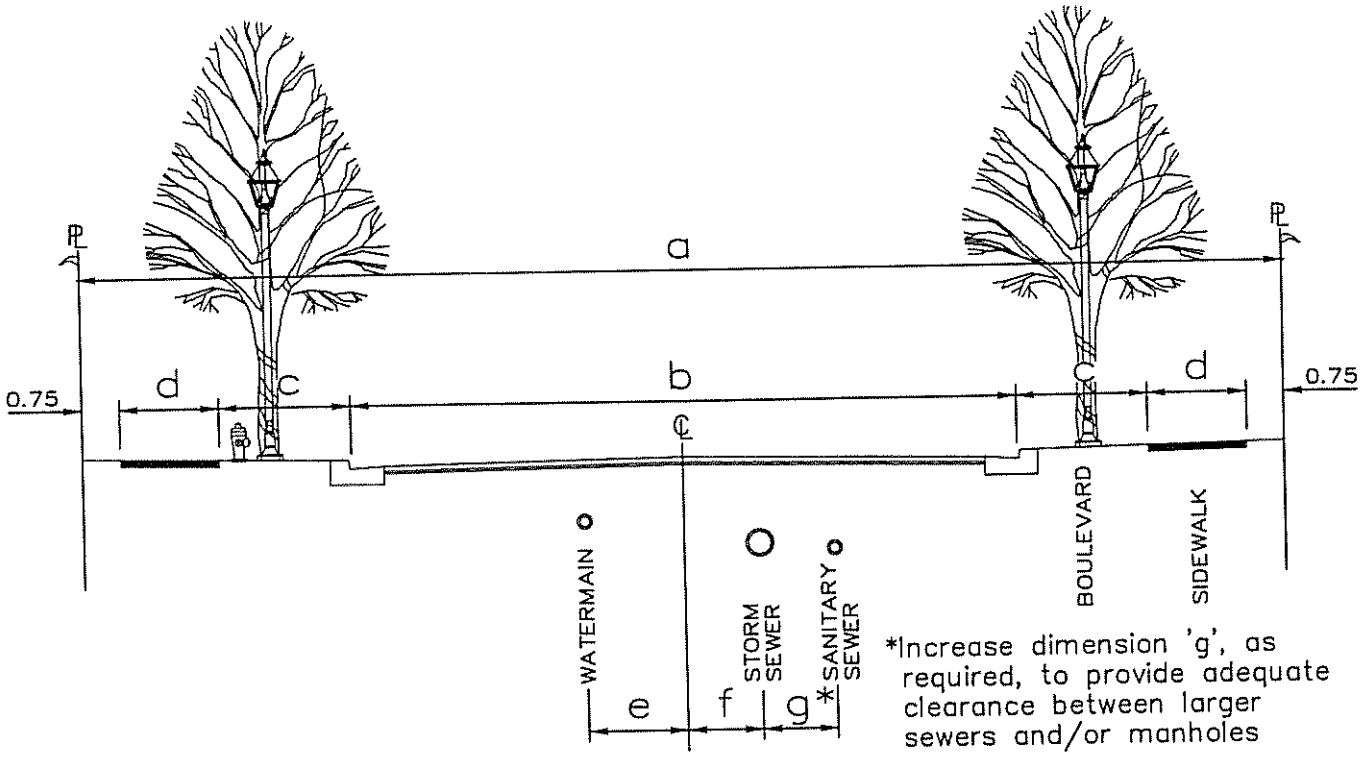
ROAD, SIDEWALK AND BOULEVARD DIMENSIONS

Street type	RoW width a	Curb to Curb width[1] b	Vehicle lanes	Bike facility[2]	Volume	Parking[3]	Boulevard c	Sidewalk[4] d	e	f	g*
Community Collector (Urban/Higher Density)	25.2m	13.4m	2x4.3	shared wide curb lane	3,000–6,000	both sides	2x2.65	2x2.5	1.9	1.1	1.0
		11.0m[5]	2x3.3	separate (1.5m) in boulevard	3,000–15,000	both sides	2x4.6	2x2.5	1.9	1.1	1.0
City Collector with on-street bike route	23.0m	14.0m	2x3.3	2x1.5 bike lanes	6,000–15,000	both sides	2x2.25	2x1.5	1.9	1.1	1.0
City Collector w/ Bike Route	20.9m	12.0m	2x3.3	2x1.5 bike lanes	6,000–15,000	one side	2x2.20	2x1.5	1.9	1.1	1.0
City Collector (w/o Bike Route)	20.0m	11.0m	2x3.3	n/a	6,000–15,000	both sides	2x2.20	2x1.5	1.9	1.1	1.0
Community Collector (Lower Density)	20.0m	11.0m	2x5.5	shared bikeway	<6000	both sides	2x2.20	2x1.5	1.9	1.1	1.0
Industrial/Service Commercial Collector/Local	20.0m	11.0m	2x4.3	shared wide curb lane	3,000–6,000	one side	2x2.20	2x1.5	1.9	1.1	1.0

1. Representative of mid-block sections, auxiliary lane(s) at intersections are not included. Up to 5.0m of additional ROW may be required.
2. Bicycle facilities are to be implemented on designated routes in accordance with the Strategic Transportation Plan and OCP/Neighborhood Plans (as amended).
3. Parking is for general guidance only. Parking may be restricted on one or both sides of the street for all periods or certain periods of the day at the discretion of the City.
4. Utility corridor varies between sidewalk/multi use pathway and property line. Utility corridors are located under sidewalks fronting urban commercial uses.
5. Refer to COQ-R26 for cross section details.

PLOTTED: 9-Jul-15

COLLECTOR STREETS	DATE: JAN/2015 DRAWN: REY SCALE: N.T.S.	DRAWING NUMBER: COQ-R2B



ROAD, SIDEWALK AND BOULEVARD DIMENSIONS

Street type	RoW width a	Curb to Curb width[1] b	Vehicle lanes	Bike facility[2]	Vehicle Volume	Parking[3]	Boulevard c	Sidewalk d	e	f	g*
Local – Higher Density & Greenways	20.0m	10.5m	1x6	shared bikeway	<3,000	both sides	2x2.20	2x1.8	2.7	0.3	1.0
Local – Low Density (incl. Housing Choices)	17.4m	8.5m	1x4.1	shared bikeway	<1,000	both sides	2x2.20	2x1.5	2.7	0.3	1.0

1. Representative of mid-block sections, auxiliary lane(s) at intersections are not included. Up to 5.0m of additional ROW may be required.
2. Bicycle facilities are to be implemented on designated routes in accordance with the Strategic Transportation Plan and OCP/Neighborhood Plans (as amended).
3. Parking is for general guidance only. Parking may be restricted on one or both sides of the street for all periods or certain periods of the day at the discretion of the City.

PLOTTED: 22-Jan-15

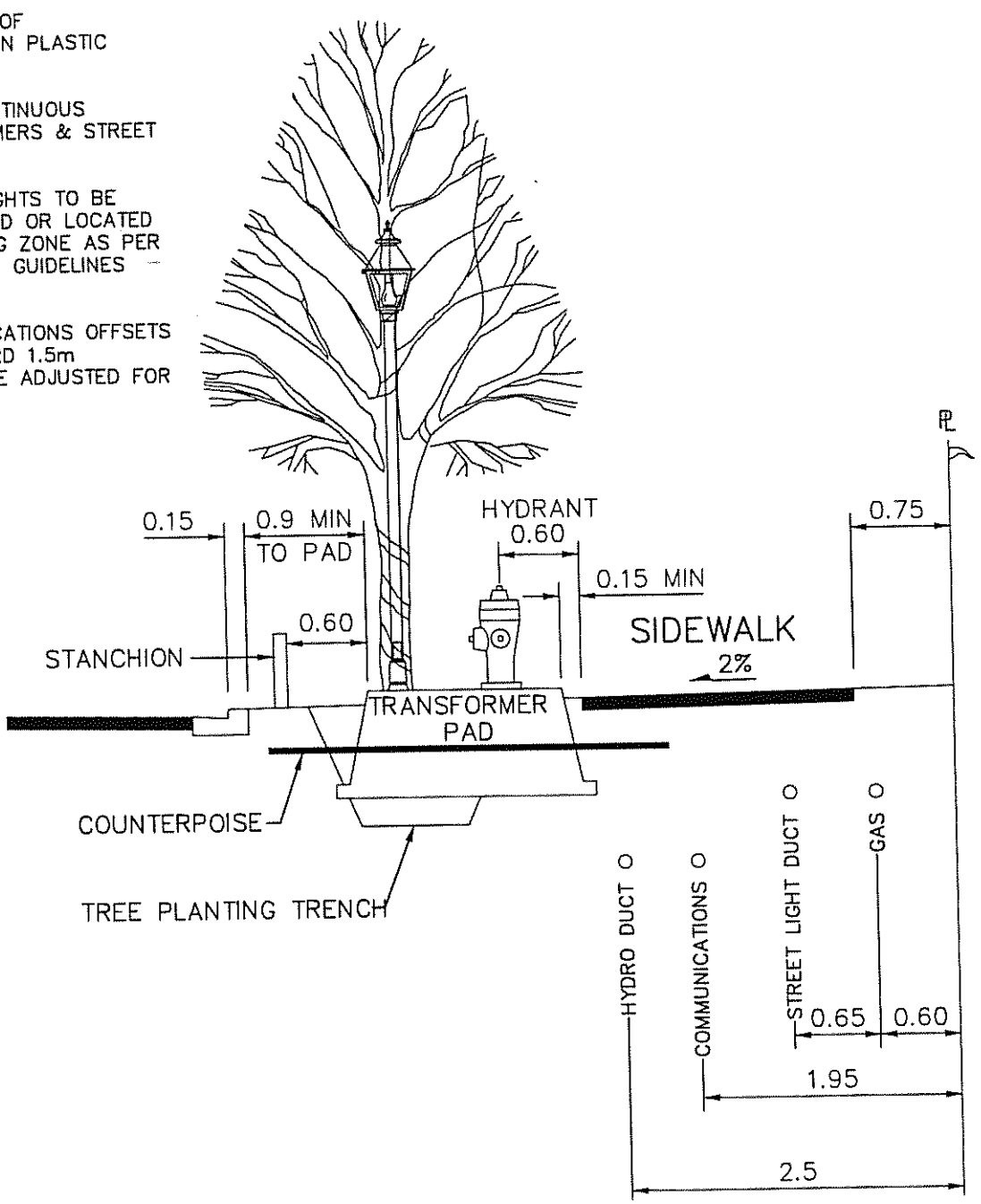
LOCAL STREETS	DATE: JAN/2015	DRAWING NUMBER: COQ-R2C
	DRAWN: REY	
	SCALE: N.T.S.	

Coquitlam

STANDARD DETAIL DRAWINGS

NOTES:

1. UTILITIES WITHIN 2.5m OF COUNTERPOISE TO BE IN PLASTIC SLEEVE.
2. PLANTING TRENCH CONTINUOUS EXCEPT AT TRANSFORMERS & STREET LIGHTS.
3. TREES AND STREET LIGHTS TO BE CENTRED IN BOULEVARD OR LOCATED WITHIN THE FURNISHING ZONE AS PER NEIGHBORHOOD DESIGN GUIDELINES WHERE APPLICABLE.
4. HYDRO AND COMMUNICATIONS OFFSETS BASED ON A STANDARD 1.5m SIDEWALK AND MAY BE ADJUSTED FOR WIDER SIDEWALKS.



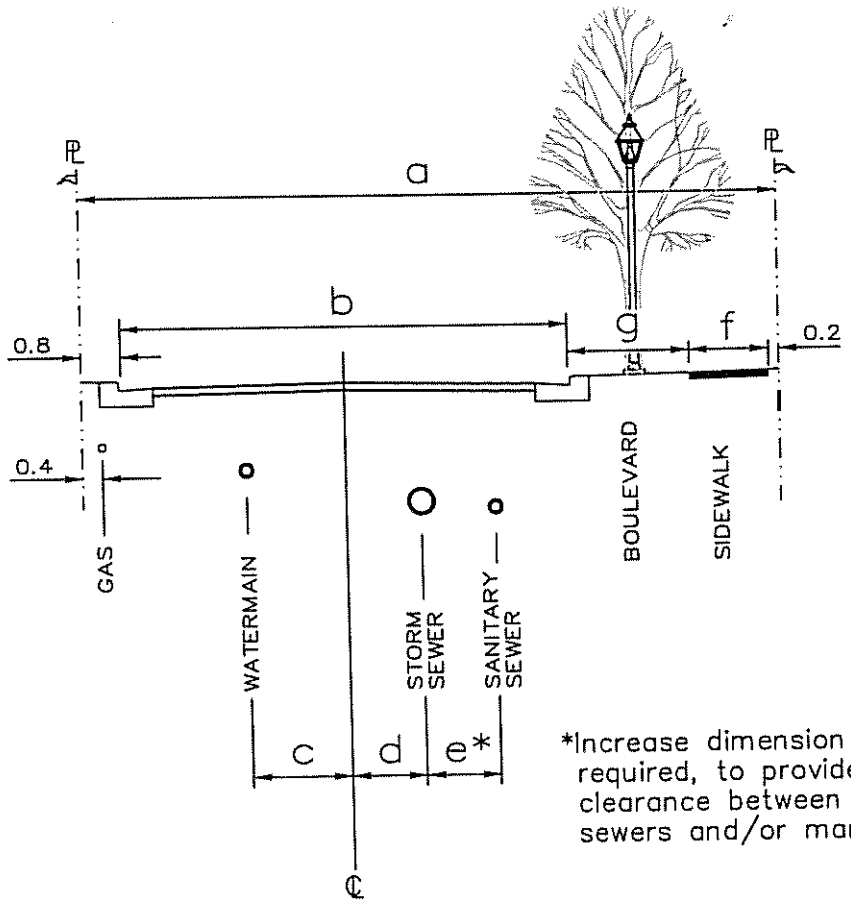
*FOR HIGHER DENSITY COMMUNITY COLLECTOR WITH CYCLE TRACK SEE COQ-R26

PLOTTED: 22-Jan-15

ARTERIAL, COLLECTOR & LOCAL STREETS BOULEVARD	DATE: JAN/2015 DRAWN: REY SCALE: N.T.S.	DRAWING NUMBER: COQ-R3

Coquitlam

STANDARD DETAIL DRAWINGS



*Increase dimension 'e', as required, to provide adequate clearance between larger sewers and/or manholes

ROAD AND RIGHT-OF-WAY DIMENSIONS

Street Section	a	b	c	d	e*	f	g
Hillside Local	13.2	8.5	2.7	0.3	1.0	1.5	2.20

PLOTTED: 22-Jan-15

HILLSIDE LOCAL STREETS

DATE:	JAN/2015
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

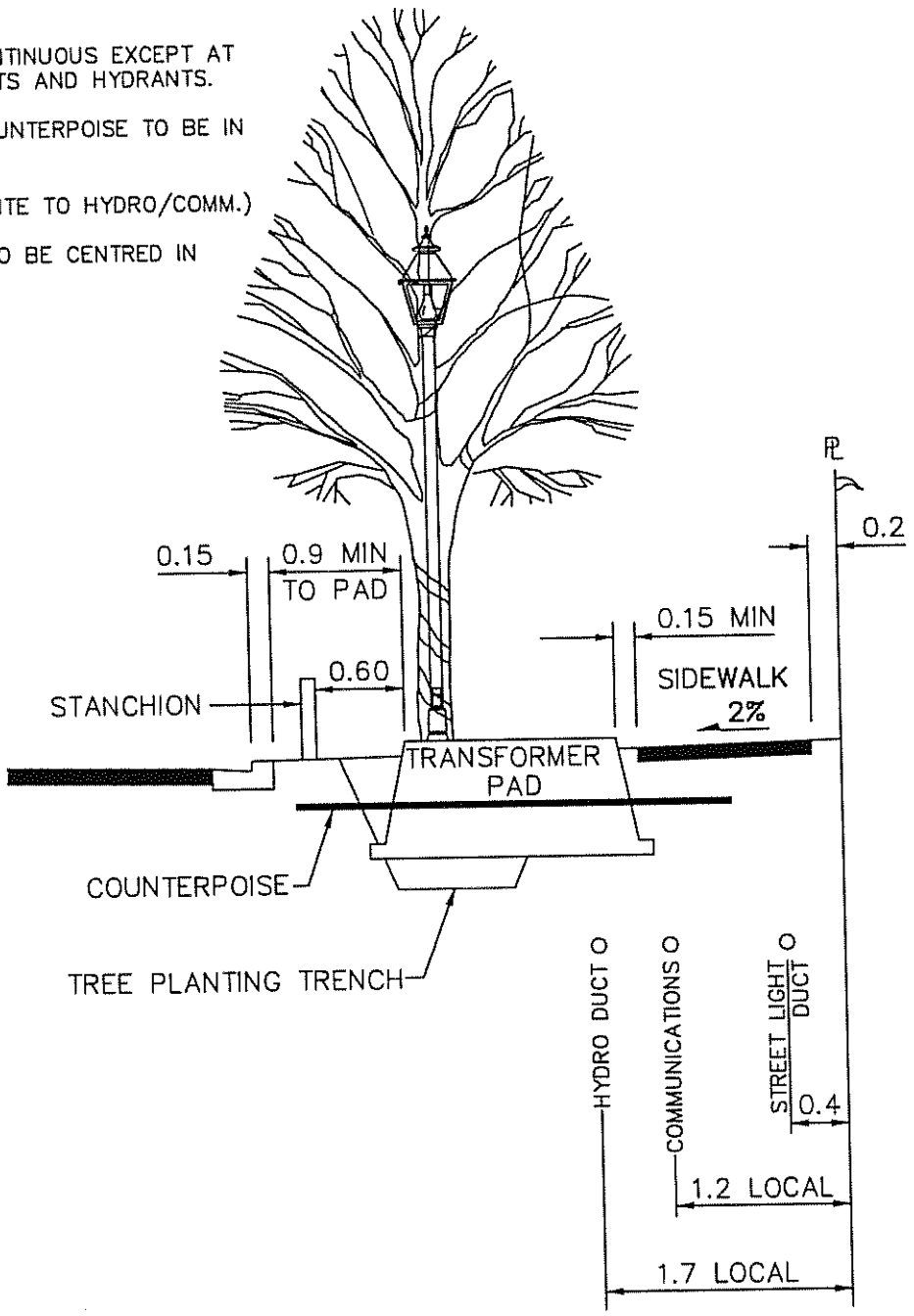
COQ-R4

Coquitlam

STANDARD DETAIL DRAWINGS

NOTES:

1. UNDERGROUND WIRING IN BOULEVARD OF ALL HILLSIDE STREETS.
2. PLANTING TRENCH TO BE CONTINUOUS EXCEPT AT TRANSFORMERS, STREET LIGHTS AND HYDRANTS.
3. UTILITIES WITHIN 2.5m OF COUNTERPOISE TO BE IN PLASTIC SLEEVE.
4. GAS ONE SIDE ONLY. (OPPOSITE TO HYDRO/COMM.)
5. TREES AND STREET LIGHTS TO BE CENTRED IN BOULEVARD.



PLOTTED: 22-Jan-15

HILLSIDE LOCAL STREETS BOULEVARD

DATE:	JAN/2015
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

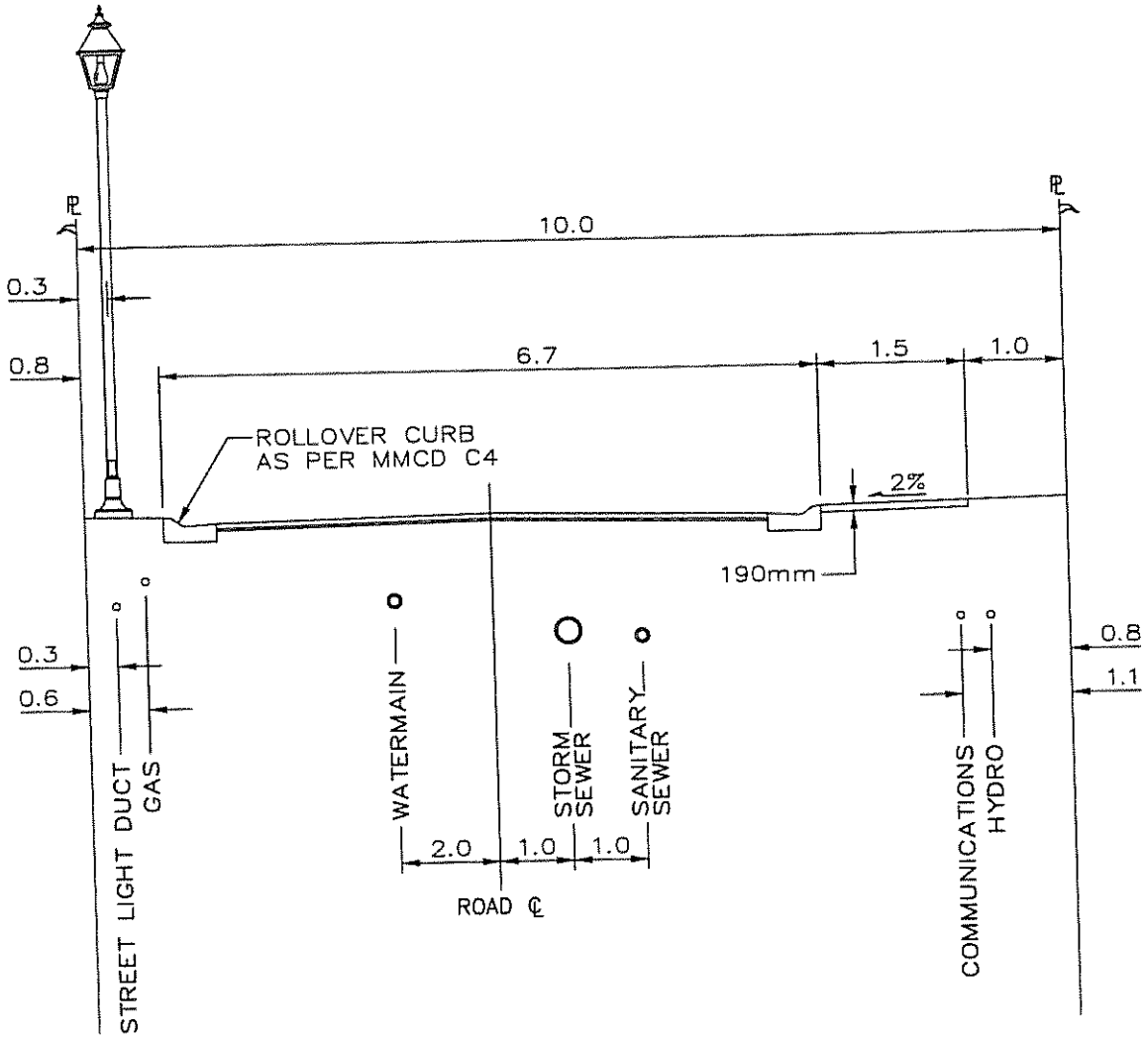
COQ-R5

Coquitlam

STANDARD DETAIL DRAWINGS

NOTE:

1. SUBJECT TO APPROVAL OF MANAGER OF DEVELOPMENT SERVICES. PARKING RESTRICTIONS WILL APPLY.
2. PROPERTY DEDICATION REQUIRED FOR HYDRO LPT.
3. WHERE A SIDEWALK IS REQUIRED ON BOTH SIDES, AN ADDITIONAL 1.5m OF DEDICATION REQUIRED.

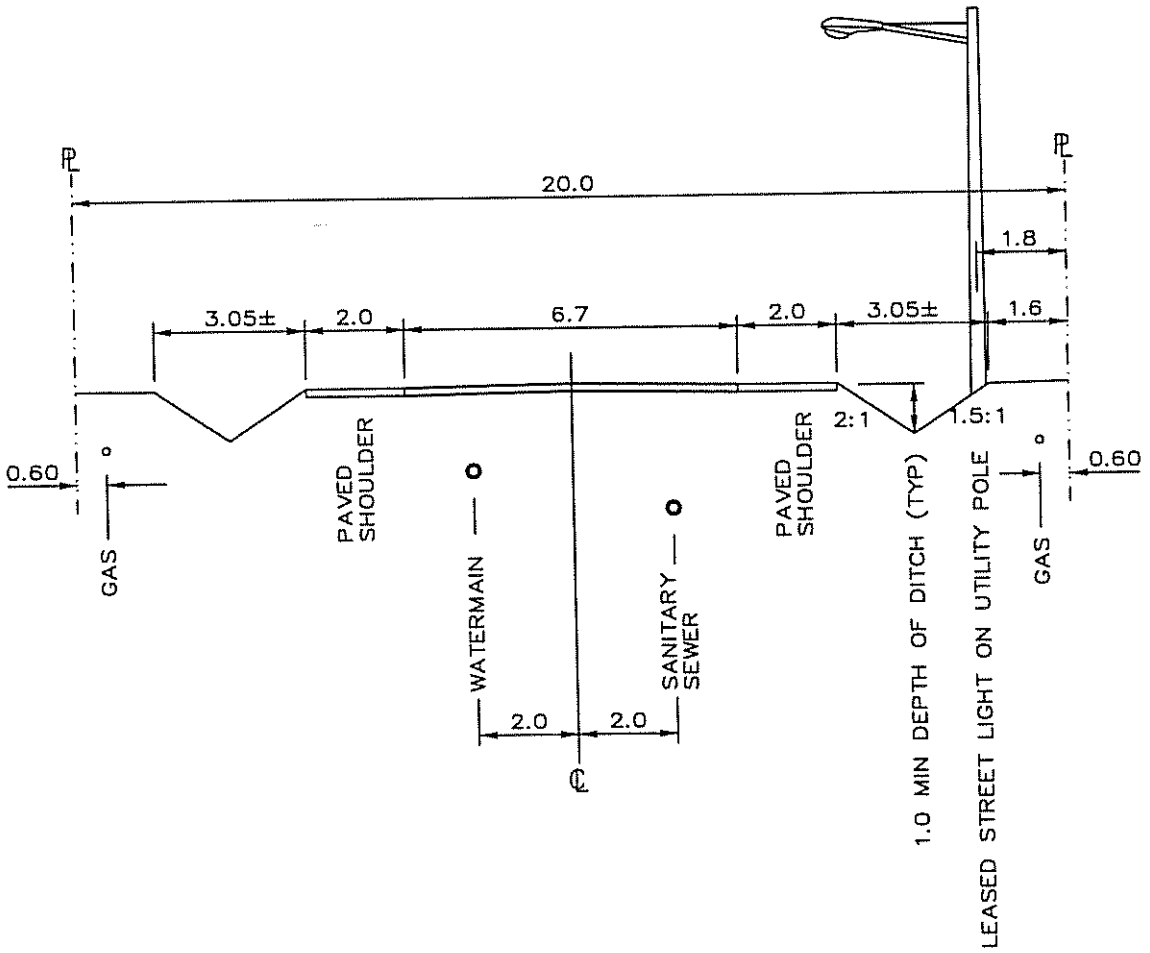


PLOTTED: 22-Jan-15

NARROW STREET	DATE: JAN/2015 DRAWN: REY SCALE: N.T.S.	DRAWING NUMBER: COQ-R6

Coquitlam

STANDARD DETAIL DRAWINGS



NOTE:

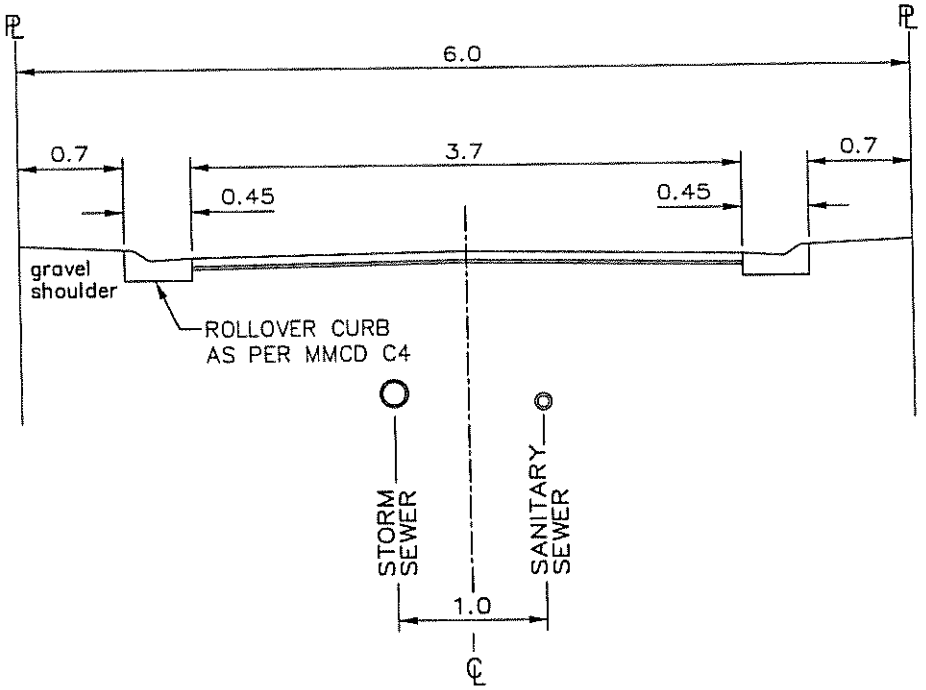
1. LINE PAINTING TO BE PROVIDED BETWEEN ROAD AND 2.0m PAVED SHOULDER.
2. 50mm x 150mm ASPHALT DRAINAGE CURB TO BE PROVIDED AT EDGE OF PAVEMENT WITH CURB CUTS AND ASPHALT DRAINAGE FLUME PROVIDED INTO DITCH ON ALL ROAD GRADES IN EXCESS OF 5%.

PLOTTED: 22-Jan-15

RURAL STREET	DATE: JAN/2015	DRAWING NUMBER: COQ-R7
	DRAWN: REY	
	SCALE: N.T.S.	

Coquitlam

STANDARD DETAIL DRAWINGS



PLOTTED: 22-Jan-15

STANDARD LANE (NEW) CONSTRUCTION

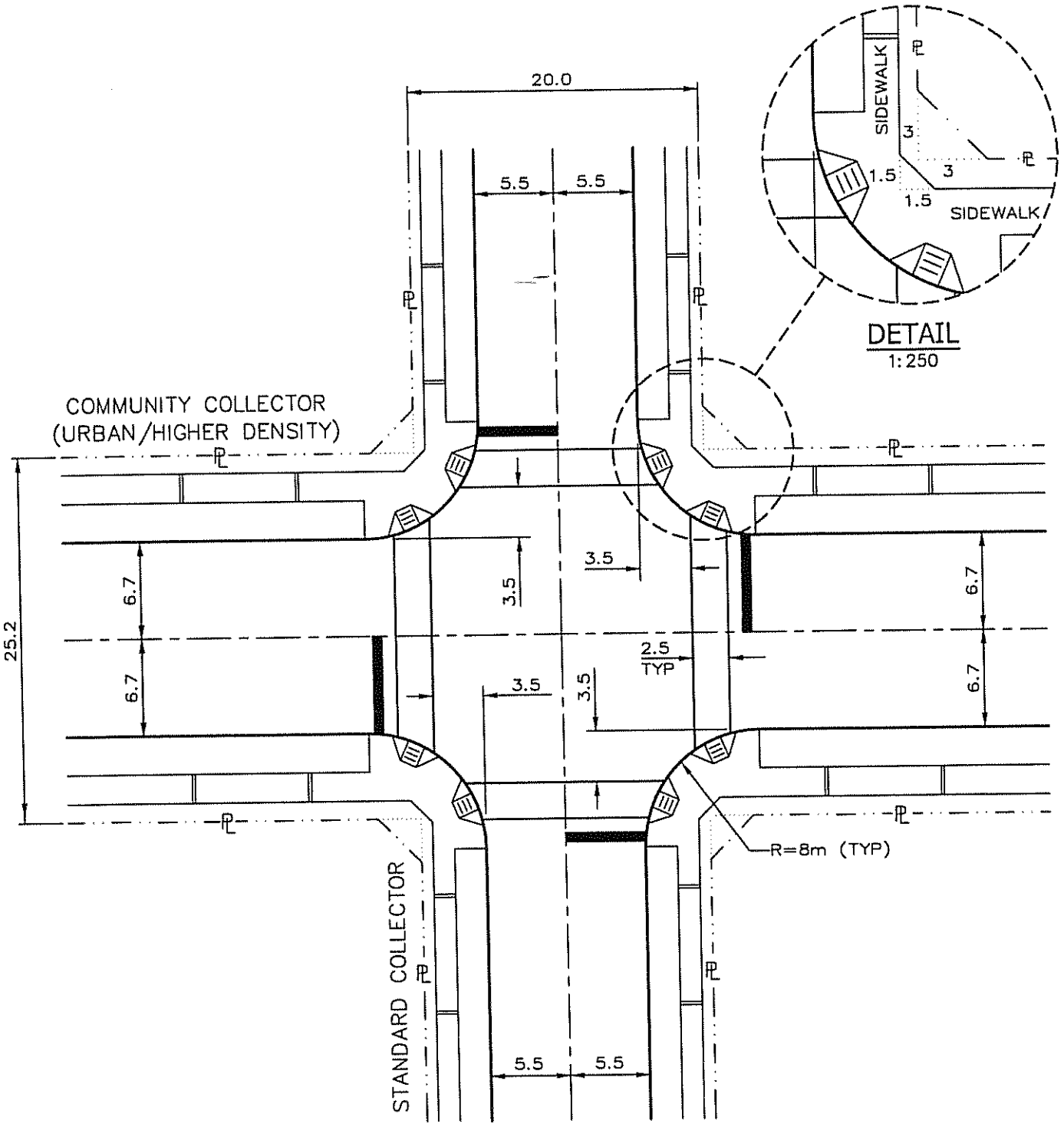
DATE:	JAN/2015
DRAWN:	REY
SCALE:	N.T.S.

DRAWING NUMBER:

COQ-R8

Coquitlam

STANDARD DETAIL DRAWINGS

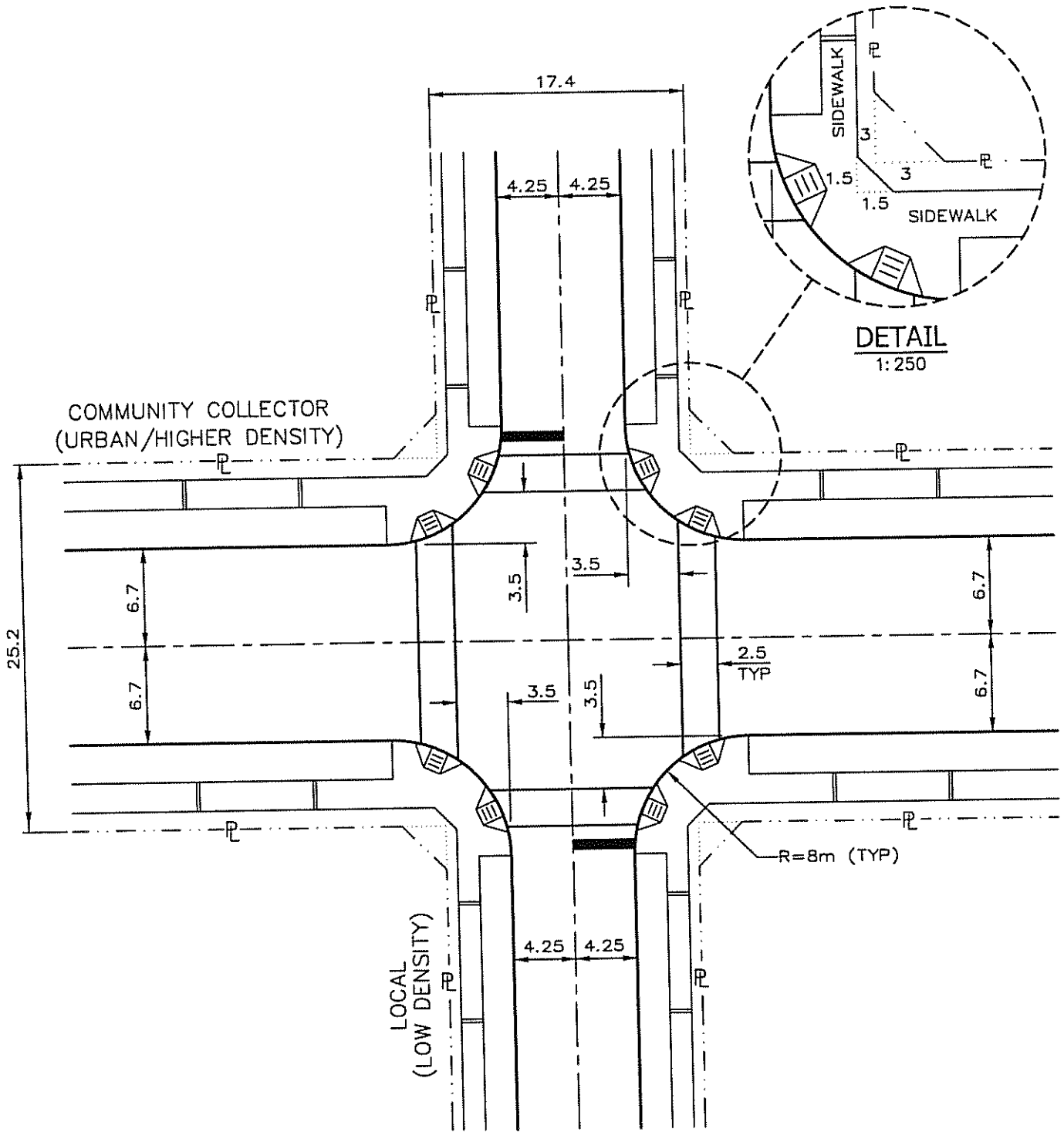


PLOTTED: 28-Jan-15

25.2m COMMUNITY - 20.0m COLLECTOR INTERSECTION	DATE: JAN/2015 DRAWN: REY SCALE: 1:400	DRAWING NUMBER: COQ-R9

Coquitlam

STANDARD DETAIL DRAWINGS

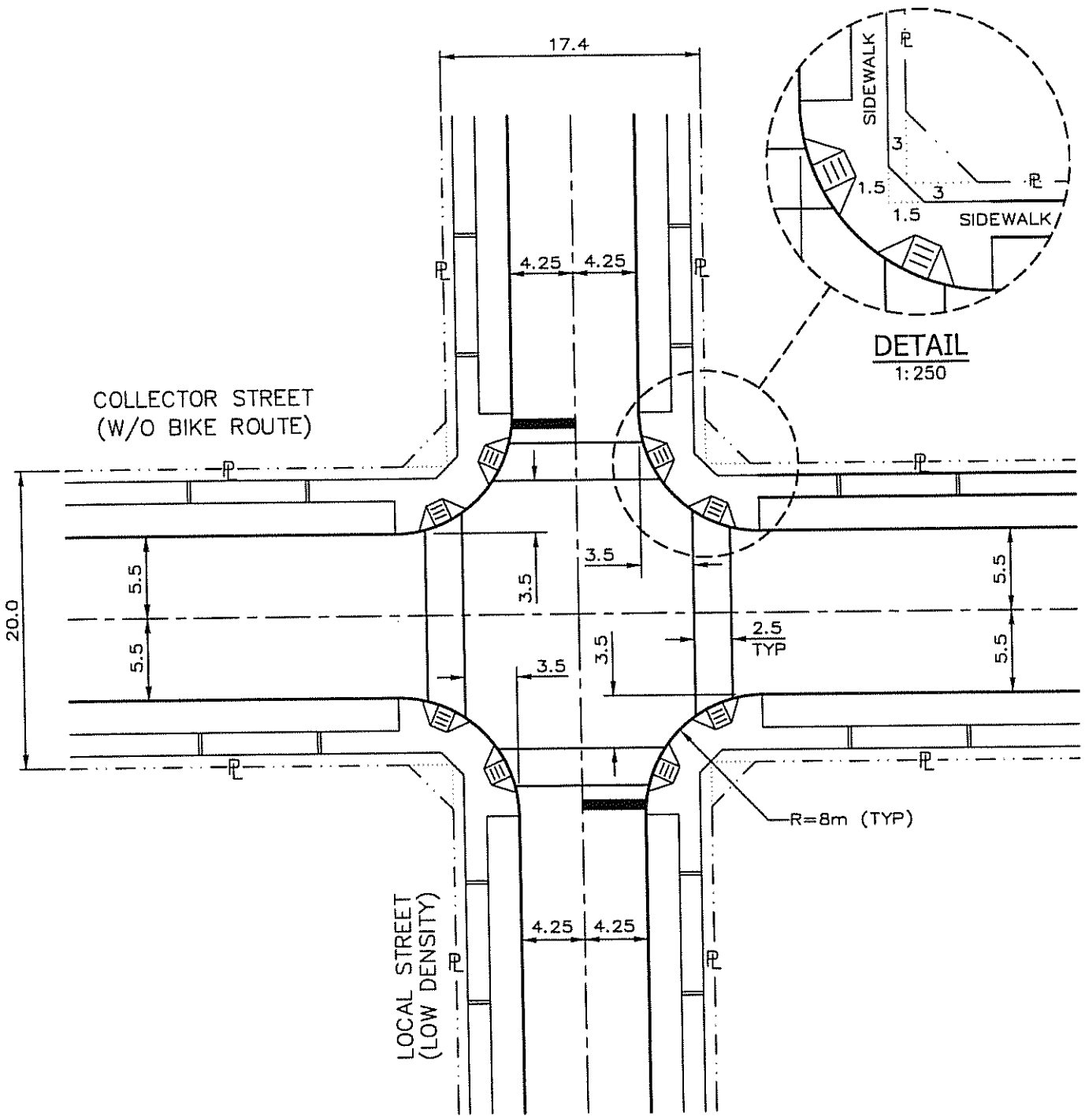


PLOTTED: 28-Jan-15

25.2m COMMUNITY - 17.4m LOCAL INTERSECTION	DATE: JAN/2015 DRAWN: REY SCALE: 1:400	DRAWING NUMBER: COQ-R10

Coquitlam

STANDARD DETAIL DRAWINGS

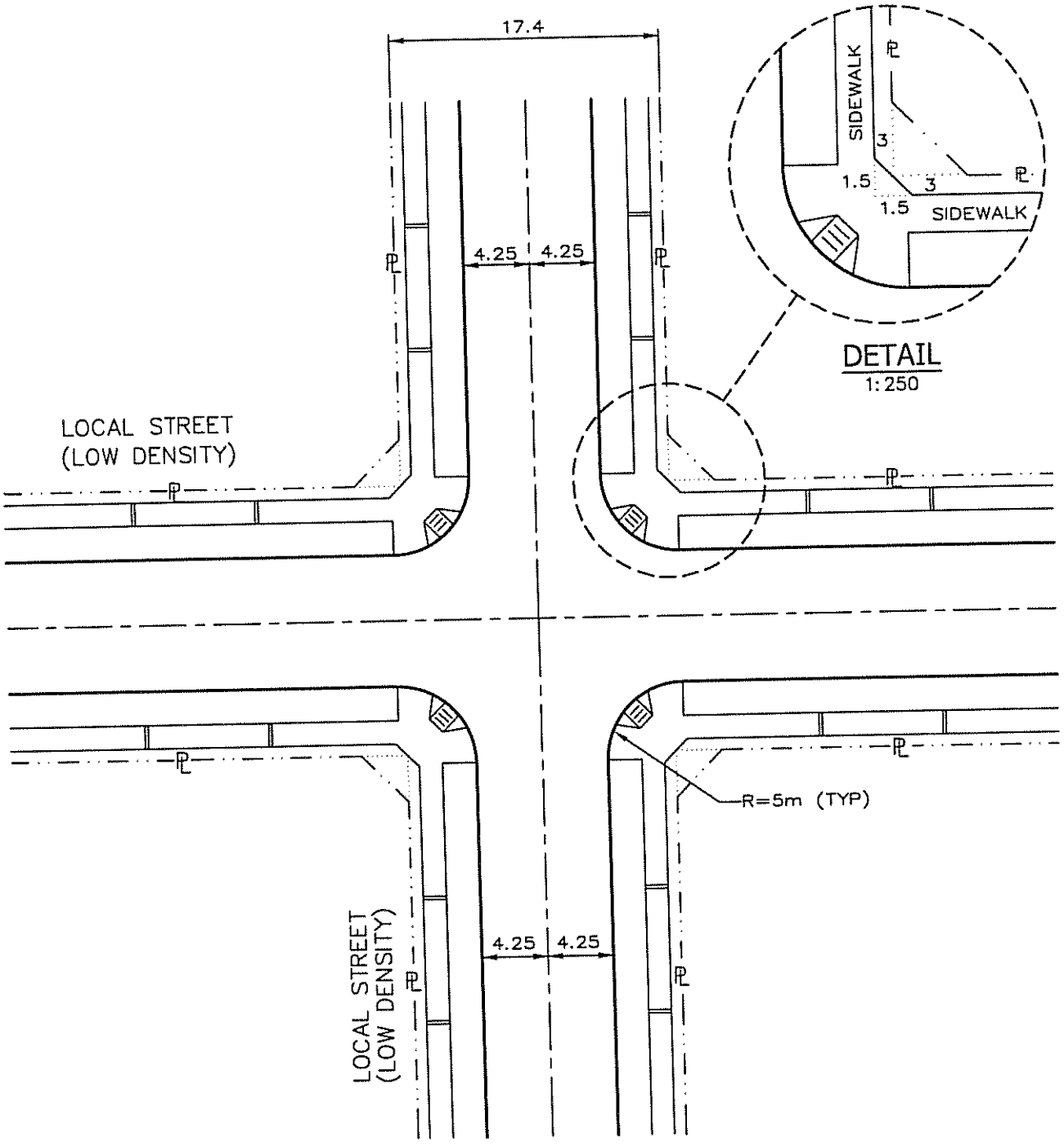


PLOTTED: 28-Jan-15

20.0m COLLECTOR - 17.4m LOCAL INTERSECTION	DATE: JAN/2015 DRAWN: REY SCALE: 1:400	DRAWING NUMBER: COQ-R11

Coquitlam

STANDARD DETAIL DRAWINGS



PLOTTED: 28-Jan-15

17.4m LOCAL STREET INTERSECTION (LOW DENSITY)

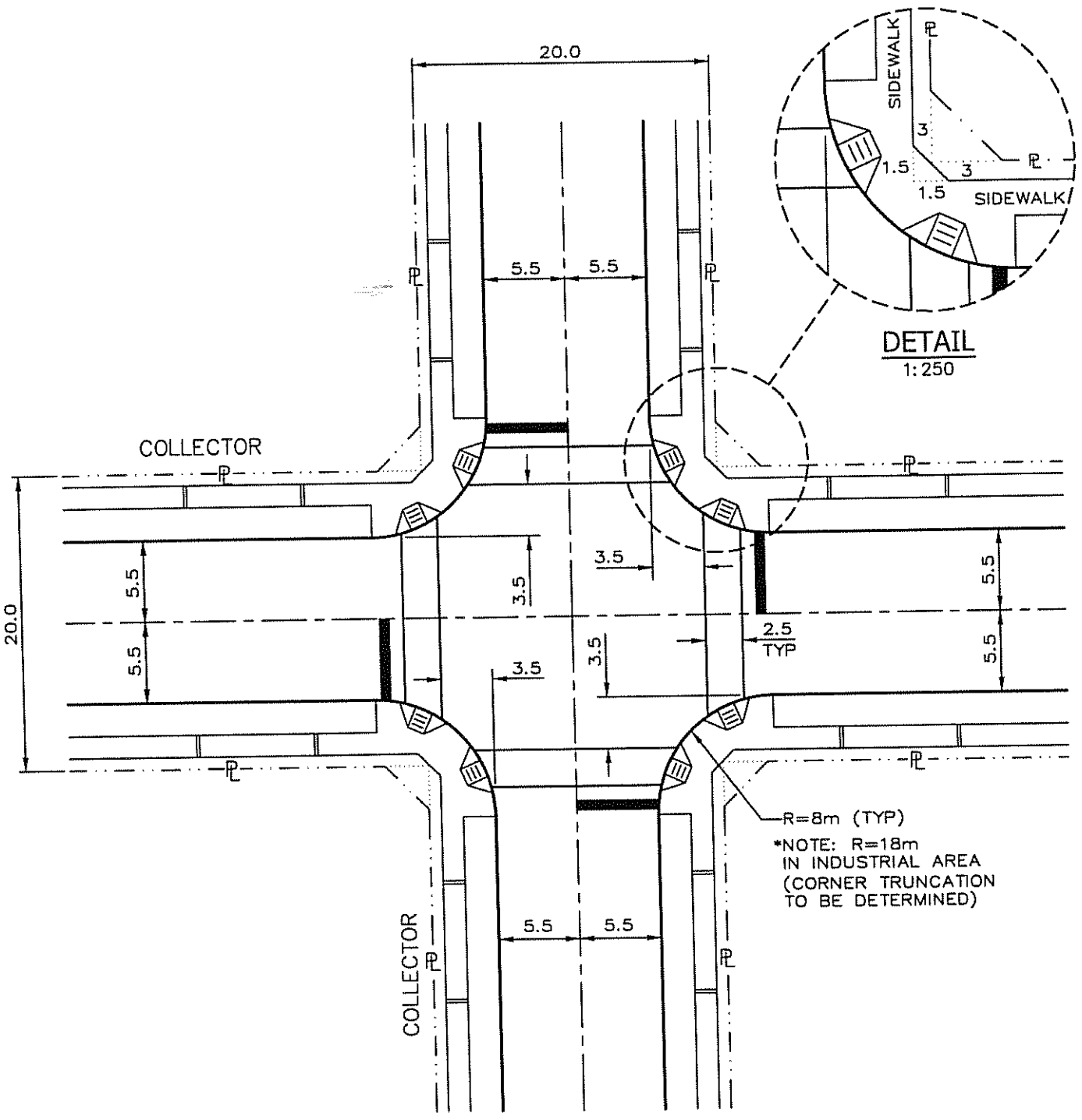
DATE:	JAN/2015
DRAWN:	REY
SCALE:	1:400

DRAWING NUMBER:

COQ-R12

Coquitlam

STANDARD DETAIL DRAWINGS

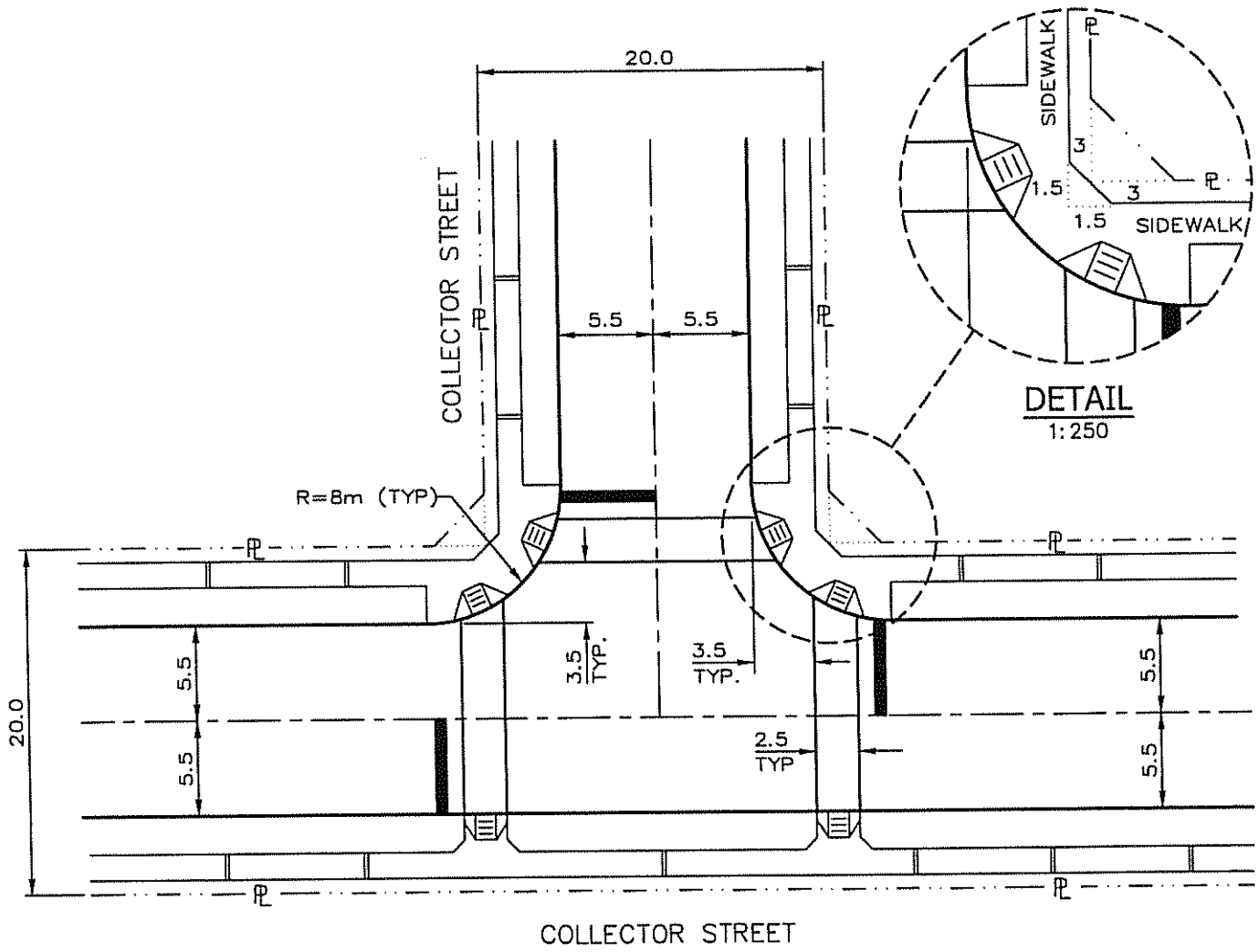


PLOTTED: 28-Jan-15

20.0m COLLECTOR STREET AND INDUSTRIAL/SERVICE COMMERCIAL 4-WAY INTERSECTION	DATE: JAN/2015	DRAWING NUMBER: COQ-R13
	DRAWN: REY	
	SCALE: 1:400	

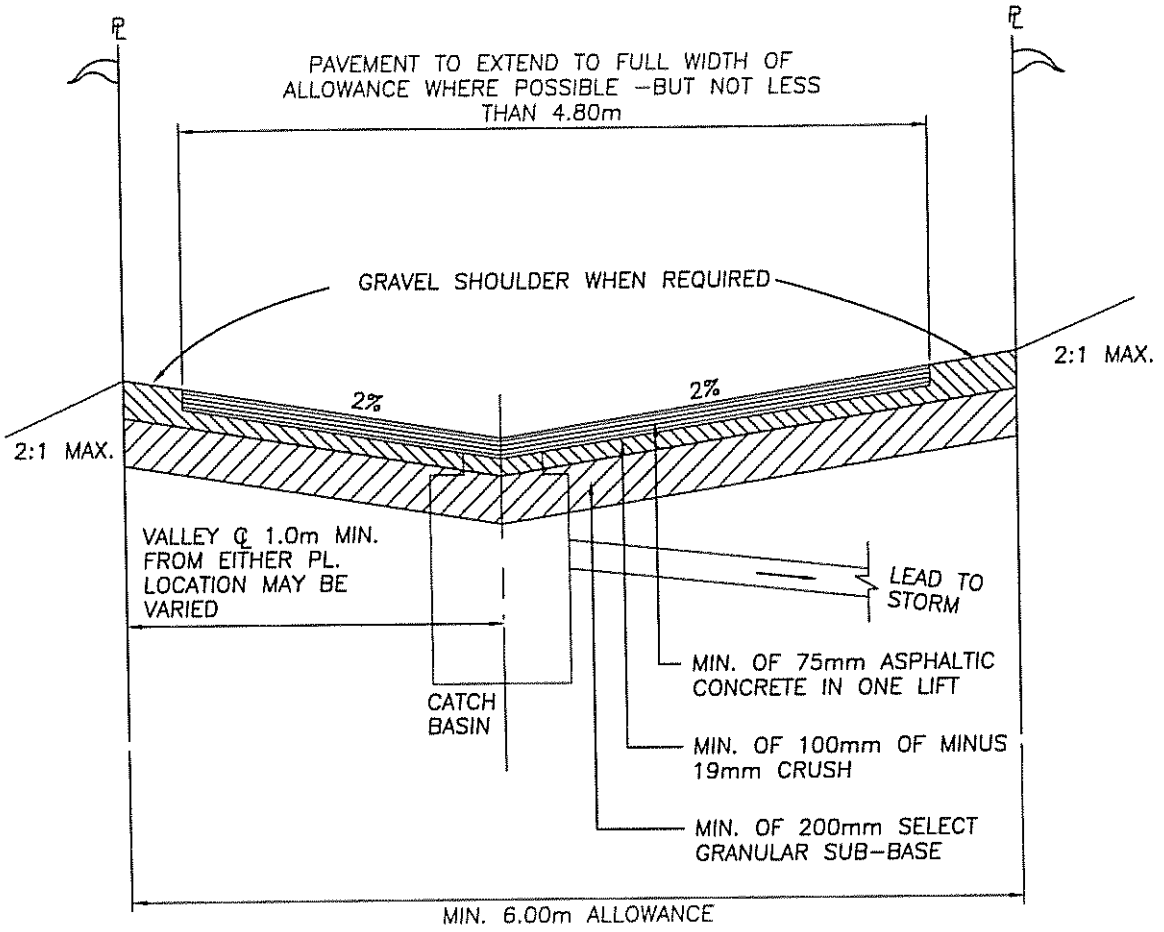
Coquitlam

STANDARD DETAIL DRAWINGS



PLOTTED: 28-Jan-15

20.0m STANDARD COLLECTOR STREET 3-WAY INTERSECTION	DATE: JAN/2015 DRAWN: REY SCALE: 1:400	DRAWING NUMBER: COQ-R14


℄
℄
PAVEMENT TO EXTEND TO FULL WIDTH OF ALLOWANCE WHERE POSSIBLE –BUT NOT LESS THAN 4.80m
GRAVEL SHOULDER WHEN REQUIRED
2:1 MAX.
2%
2%
2:1 MAX.
VALLEY ℄ 1.0m MIN. FROM EITHER PL. LOCATION MAY BE VARIED
LEAD TO STORM
MIN. OF 75mm ASPHALTIC CONCRETE IN ONE LIFT
CATCH BASIN
MIN. OF 100mm OF MINUS 19mm CRUSH
MIN. OF 200mm SELECT GRANULAR SUB–BASE
MIN. 6.00m ALLOWANCE

NOTE:
CATCH BASINS TO BE LOCATED AT LOW POINTS AND CONNECTED TO STORM SEWER AS LONGITUDINAL PROFILE REQUIRES AT LEAST ONE PER BLOCK AT LOW END AT CROSS STREET PL.

CURB ON GRAVEL BASE AS PER DWG. COQ–R17 MAY BE USED BY THE DESIGNER WHERE SPECIAL DRAINAGE AND/OR GRADE PROBLEMS REQUIRE AND WHERE DICTATED BY THE MANAGER.

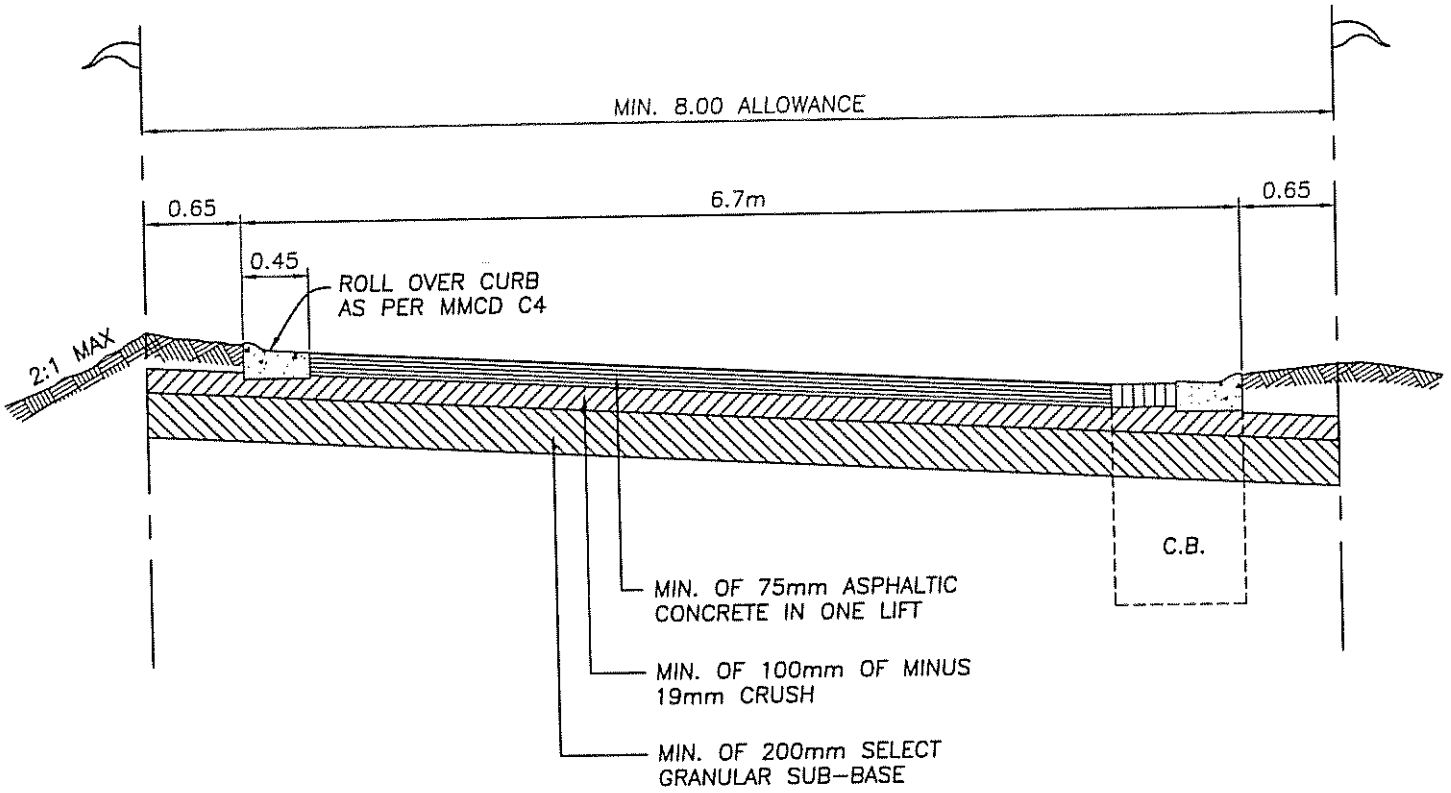
ALGEBRAIC DIFFERENCE IN CROSSFALL GRADE SHALL NOT EXCEED 6%.

PLOTTED: 22–Jan–15

STANDARD LANE CONSTRUCTION (EXISTING)	DATE: JAN/2015	DRAWING NUMBER: COQ-R16
	DRAWN: REY	
	SCALE: N.T.S.	

Coquitlam

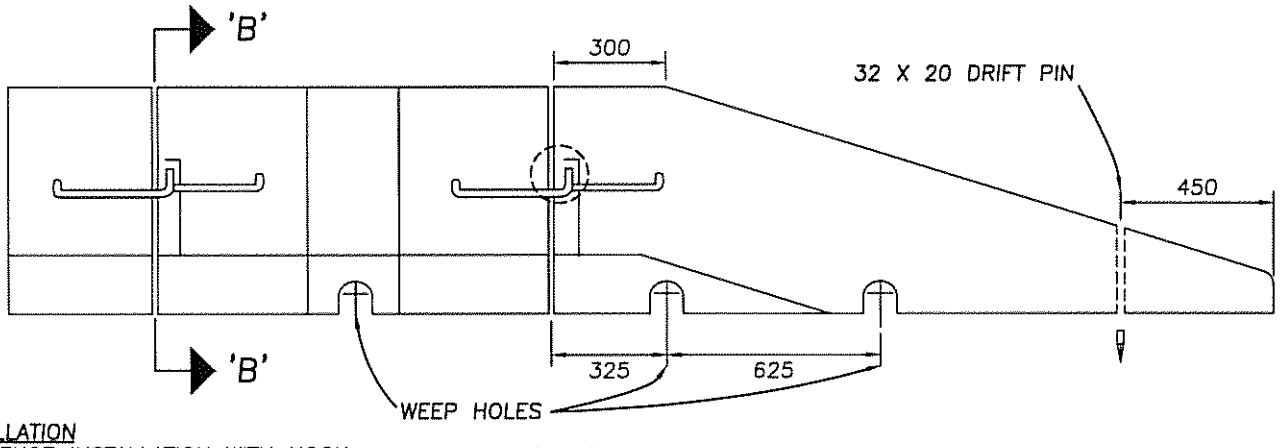
STANDARD DETAIL DRAWINGS



NOTE:
CATCH BASINS TO BE LOCATED AT LOW POINTS AND CONNECTED TO STORM SEWER AS LONGITUDINAL PROFILE REQUIRES AT LEAST ONE PER BLOCK AT LOW END AT CROSS STREET PL.

PLOTTED: 22-Jan-15

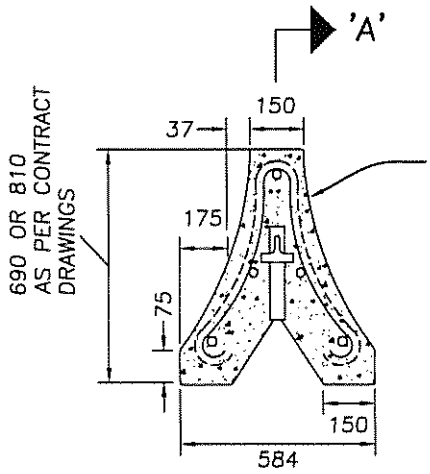
PRIMARY ACCESS LANE 8.0m RIGHT-OF-WAY	DATE: JAN/2015 DRAWN: REY SCALE: N.T.S.	DRAWING NUMBER: COQ-R17



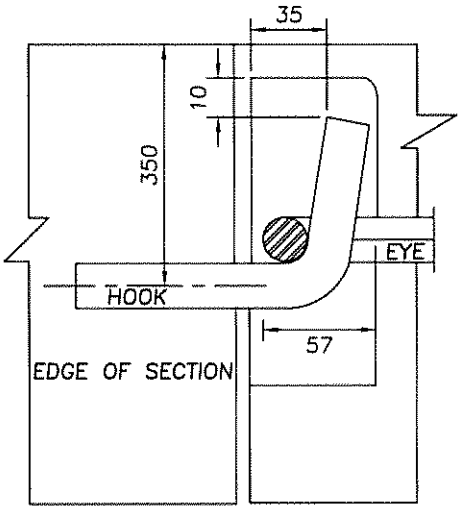
SECTION 'A–A'

INSTALLATION

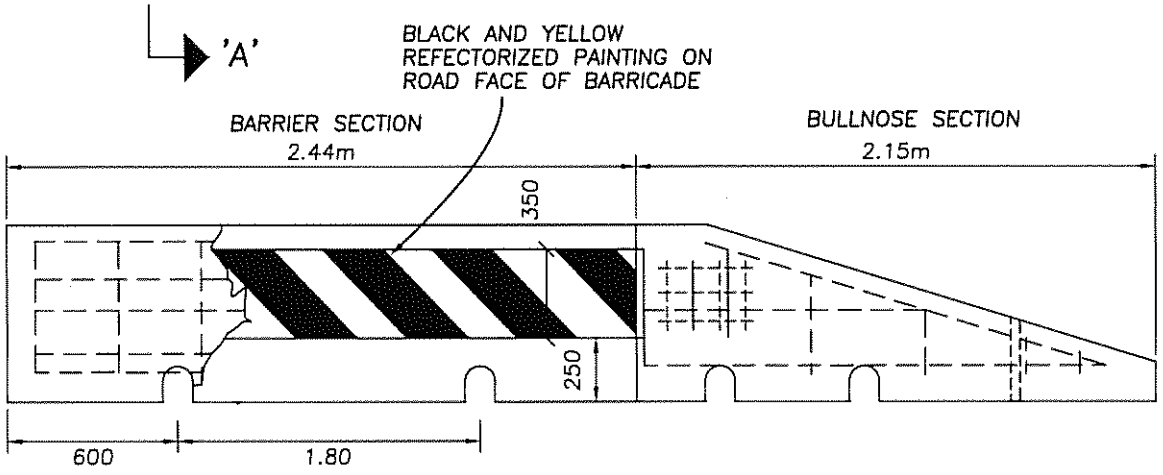
COMMENCE INSTALLATION WITH HOOK ON LEADING END, BULL NOSE SECTION TO BE PLACED FIRST. END OF BARRIER IS A BULLNOSE SECTION WITH EYE CONNECTOR.



NO POST BARRIER TYPE A OR APPROVED EQUAL, MEETING BC HIGHWAYS SPECIFICATIONS.



DETAIL 1



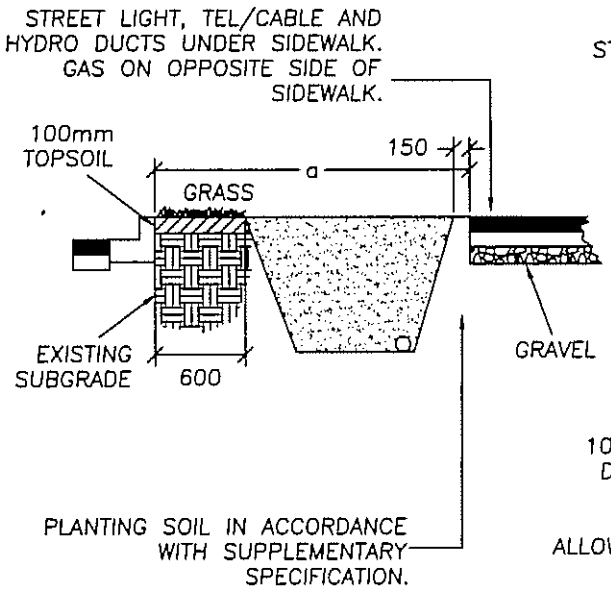
FRONT ELEVATION

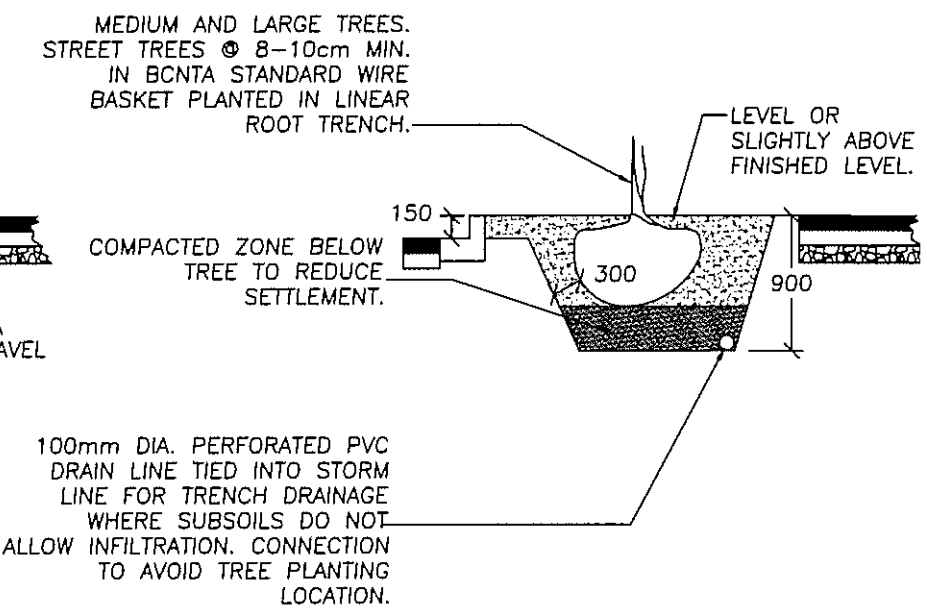
City of Coquitlam

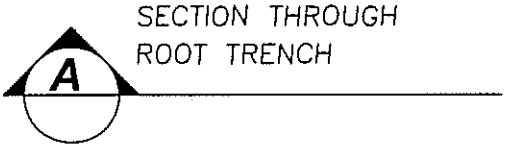
PRECAST REINFORCED CONCRETE 'NO–POST' BARRIER

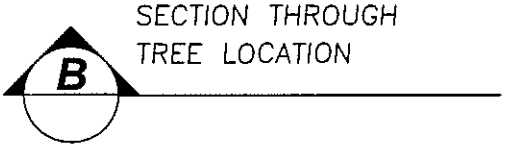
drawing # change, minor text changes			2	03/03	
drawing # change			1	06/02	
REVISIONS			No.	DATE:	CKD. APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:		
SCALE: N.T.S.	DATE: OCT 27/97		DRAWING NO.: COQ–R18		

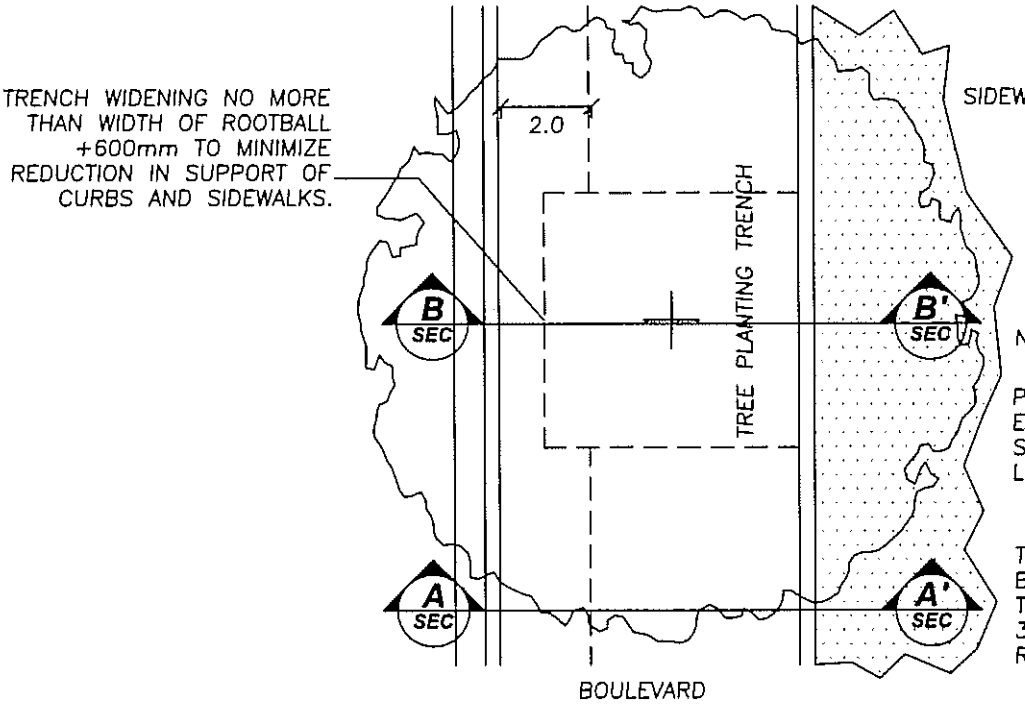
FILE: COQ–R18




MEDIUM AND LARGE TREES. STREET TREES @ 8–10cm MIN. IN BCNTA STANDARD WIRE BASKET PLANTED IN LINEAR ROOT TRENCH.
LEVEL OR SLIGHTLY ABOVE FINISHED LEVEL.
150
COMPACTED ZONE BELOW TREE TO REDUCE SETTLEMENT.
300
900
100mm DIA. PERFORATED PVC DRAIN LINE TIED INTO STORM LINE FOR TRENCH DRAINAGE WHERE SUBSOILS DO NOT ALLOW INFILTRATION. CONNECTION TO AVOID TREE PLANTING LOCATION.







NOTES:

PLANTING TRENCH CONTINUOUS EXCEPT AT TRANSFORMERS, SERVICE VAULTS & STREET LIGHTS.

TREES TO BE CENTRED IN BOULEVARD AND PLANTING TRENCH WIDENED TO ALLOW 300mm TOPSOIL AROUND ROOTBALL.

STREET CLASSIFICATION	"a"
Standard Local	2.1
Standard Collector	2.05
Hillside Local	2.1
Hillside Collector	2.1
Community Collector	2.5
Arterial	2.55

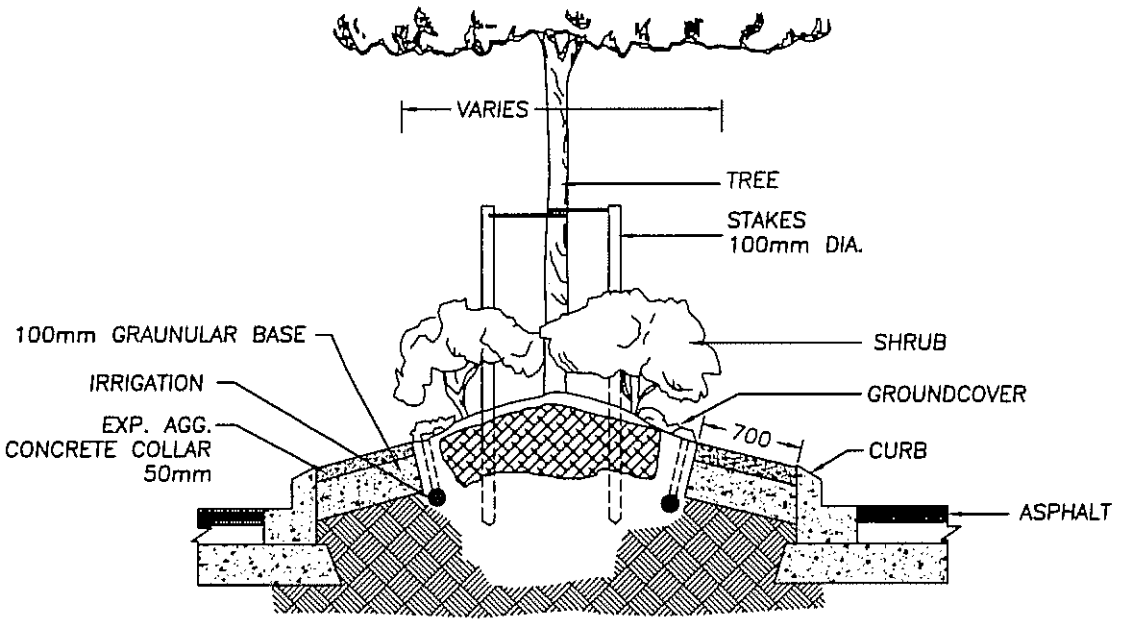
NOTE: All dimensions in metres

Destroy All Prints Bearing Rev. No. less than one indicated belo

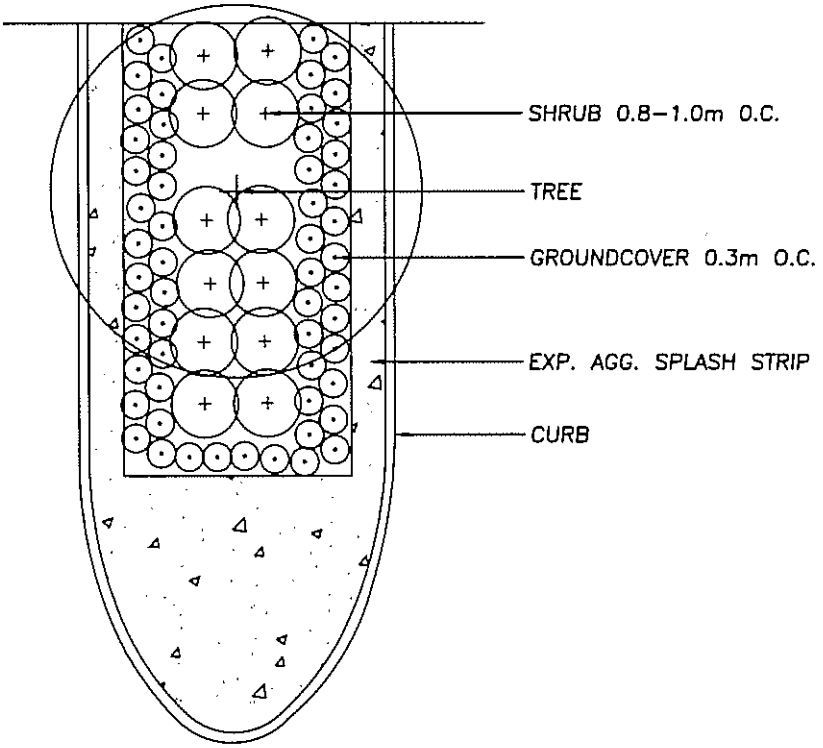
City of Coquitlam

STREET TREE TRENCH AND PLANTING DETAIL

REVISIONS			
DESIGNED:	DRAWN: R.D.	CHECKED:	PLOTTED:
SCALE: N.T.S.	DATE: 17-OCT-11	SHT. 1 OF 1	FILE: COQ-R19



TYPICAL CROSS SECTION



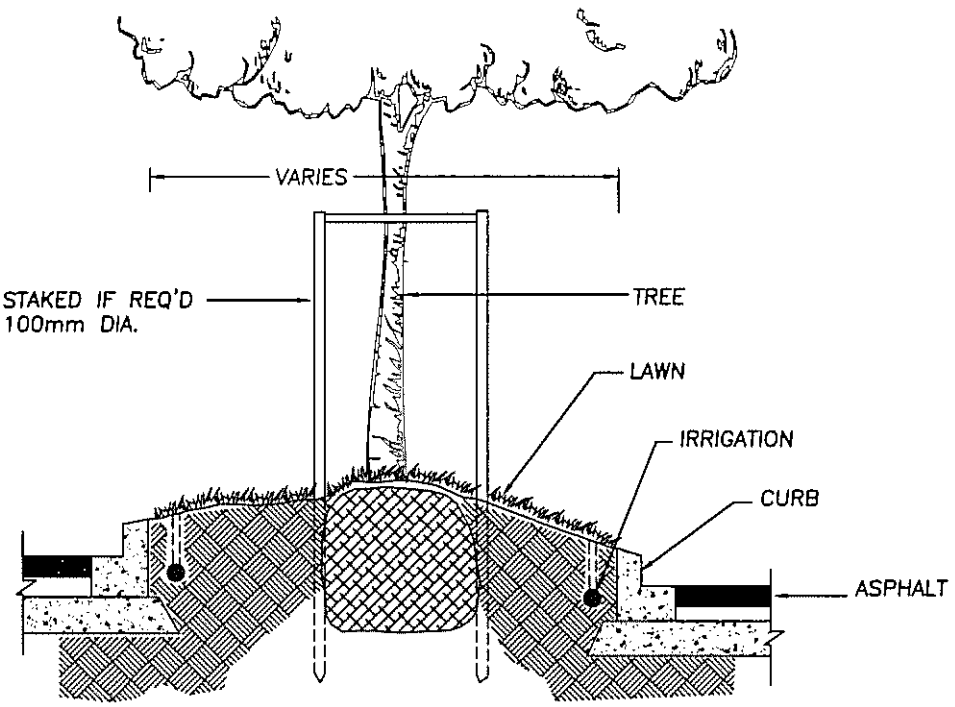
PLAN

City of Coquitlam

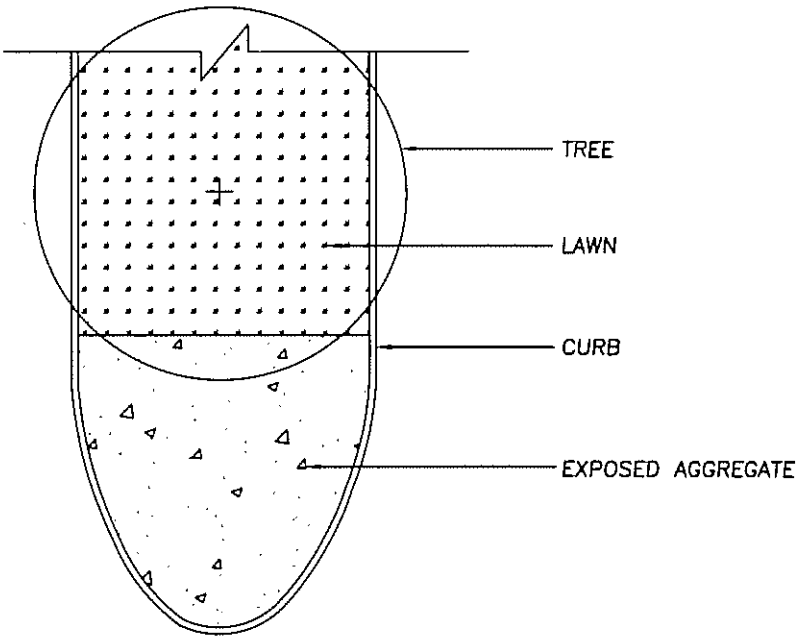
MEDIAN TYPE I

drawing # change			1	03/03		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 22/97		DRAWING NO.: COQ–R20			

FILE: COQ–R20



SECTION



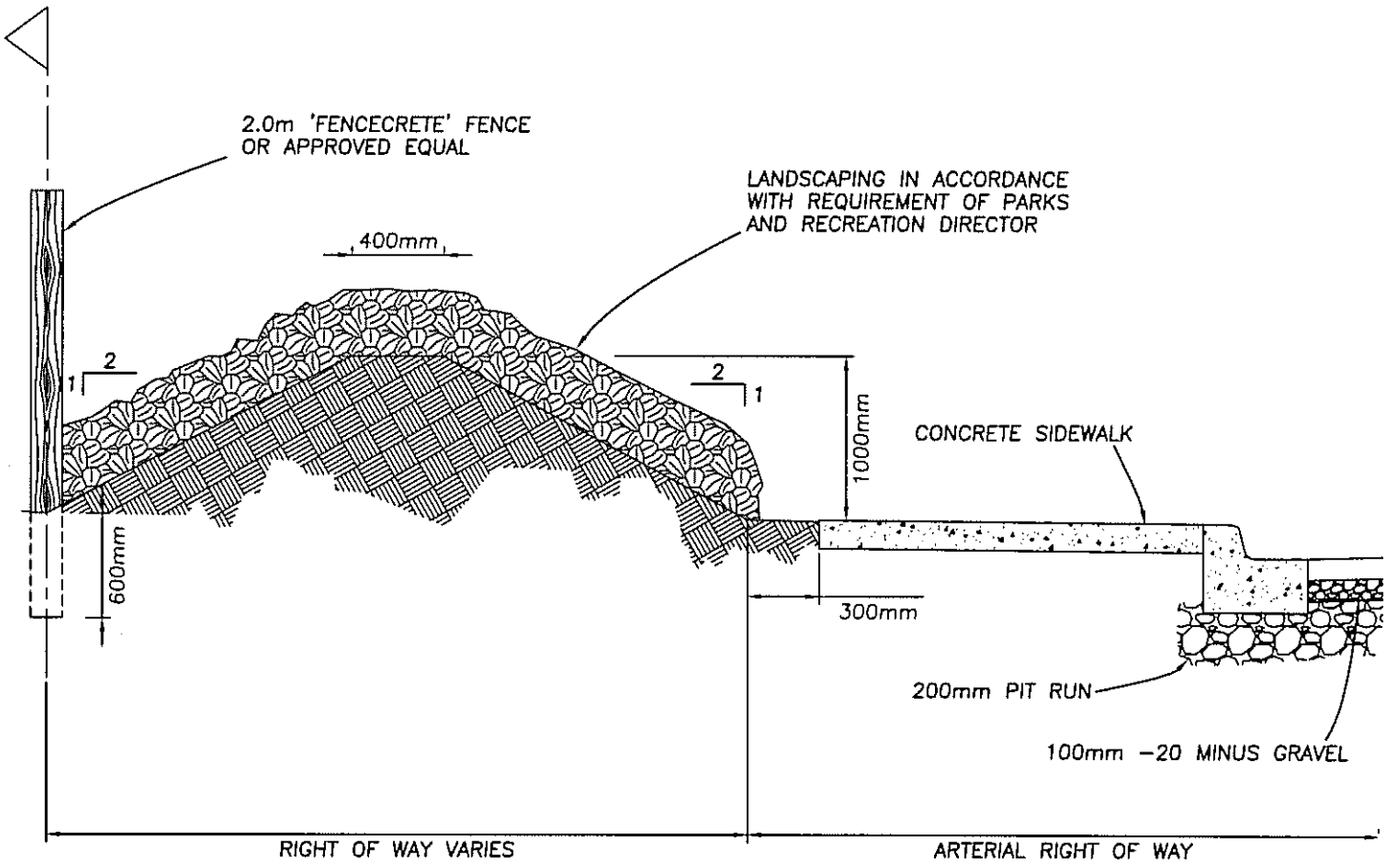
PLAN

City of Coquitlam

MEDIAN TYPE II

drawing # change			1	03/03		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 24/97		DRAWING NO.: COQ-R21			

FILE: COQ-R21

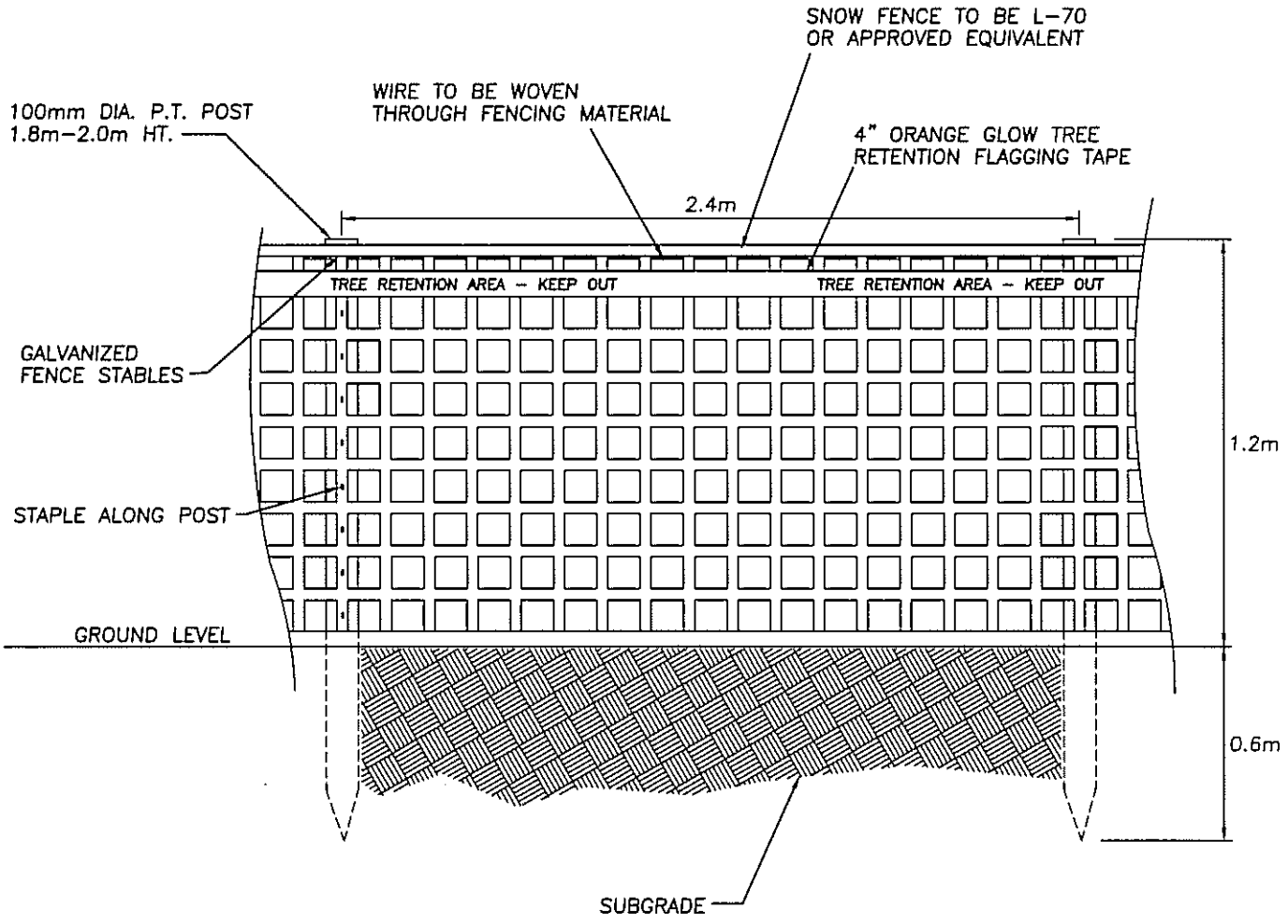


City of Coquitlam

SOUND REDUCTION BERM & FENCING – ARTERIAL ROADS

drawing # change			1	03/03		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 24/97		DRAWING NO.: COQ-R22			

FILE: COQ-R22

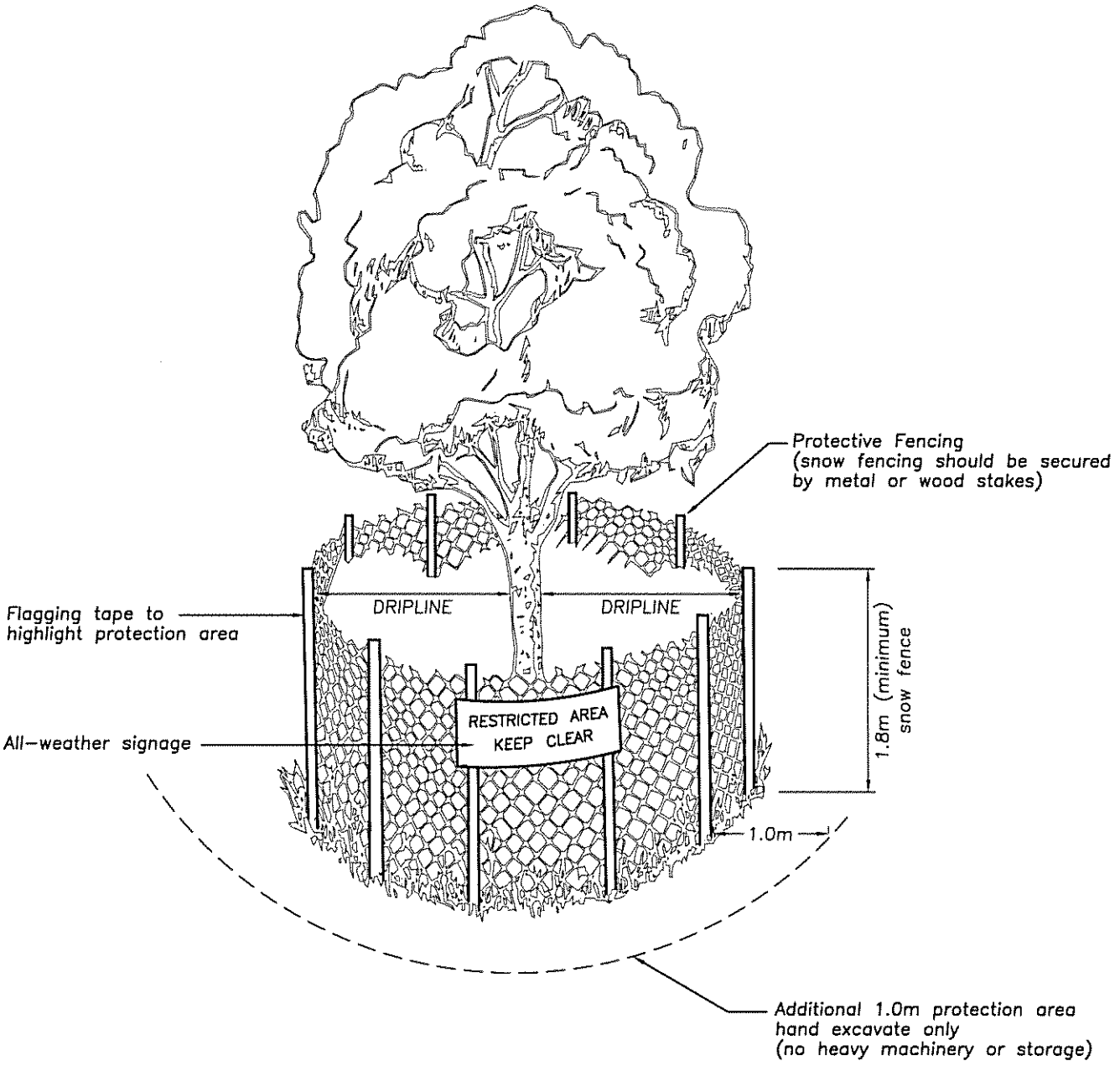


City of Coquitlam

PROTECTION FENCING

drawing # change			1	03/03		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 24/97		DRAWING NO.: COQ-R23			

FILE: COQ-R23



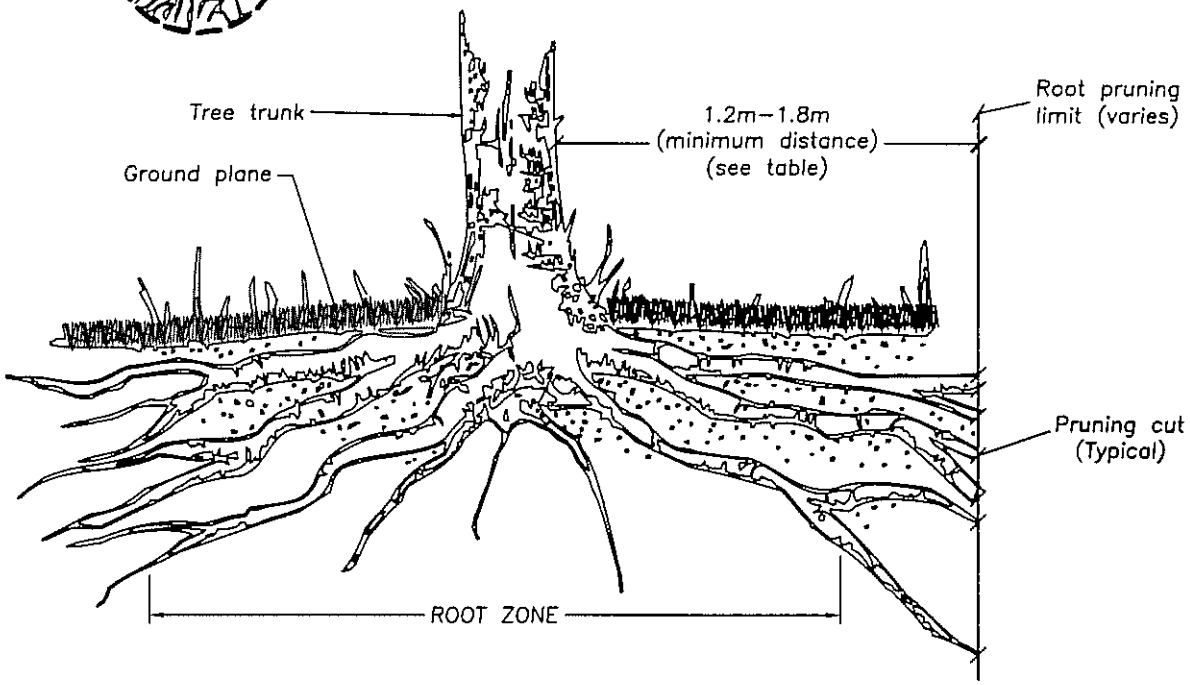
City of Coquitlam

TREE RETENTION GUIDELINE

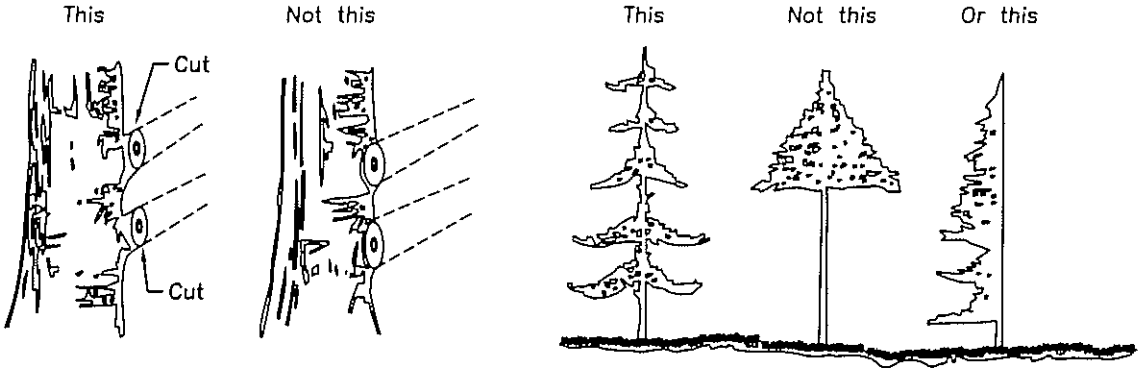
drawing # change			1	03/03		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 22/97		DRAWING NO.: COQ-R24			

FILE: COQ-R24

PLAN VIEW:
Maximum 25% on one side
or no more than 33% of total



ROOT PRUNING GUIDELINE



BRANCH PRUNING

City of Coquitlam

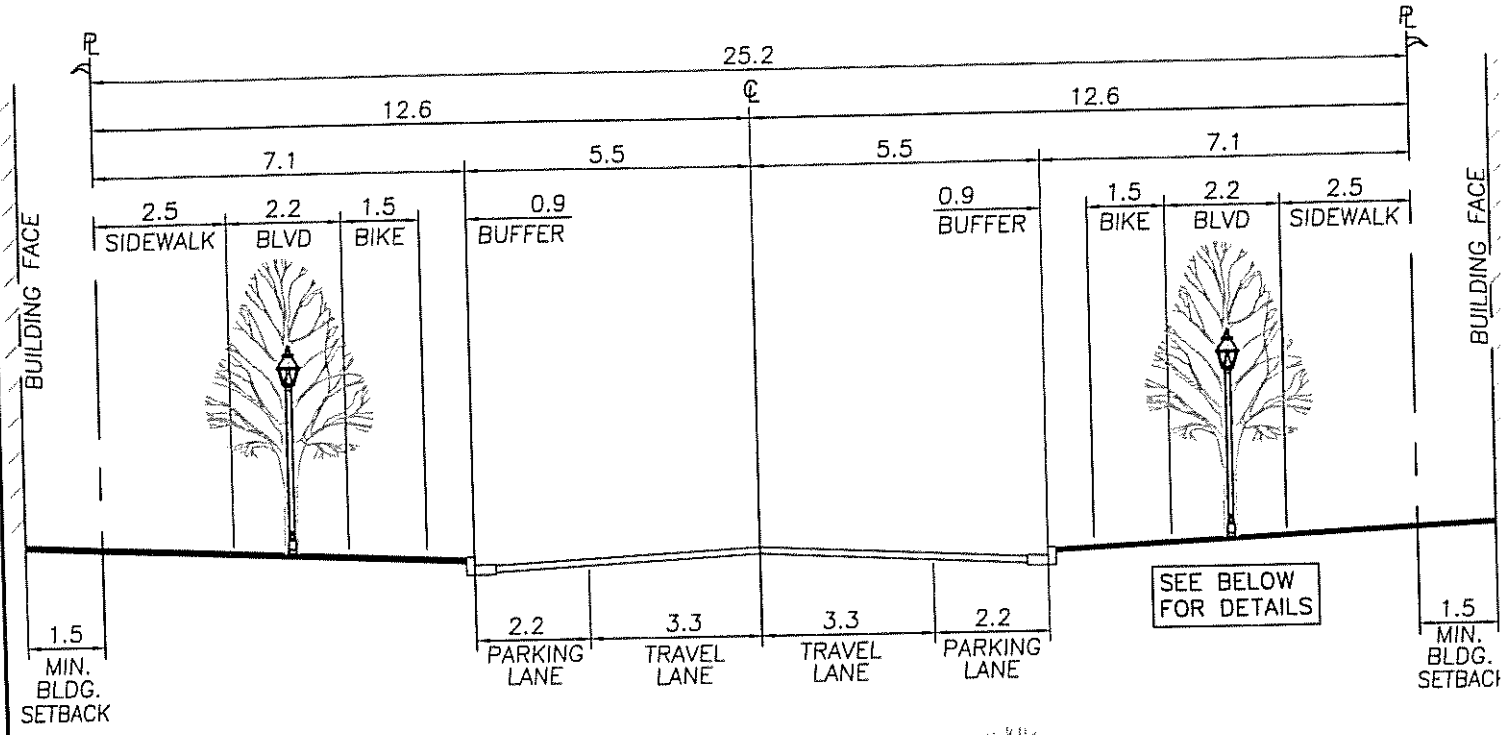
Root Pruning Guideline

drawing # change			1	03/03		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 2/97		DRAWING NO.: COQ–R25			

FILE: COQ–R25

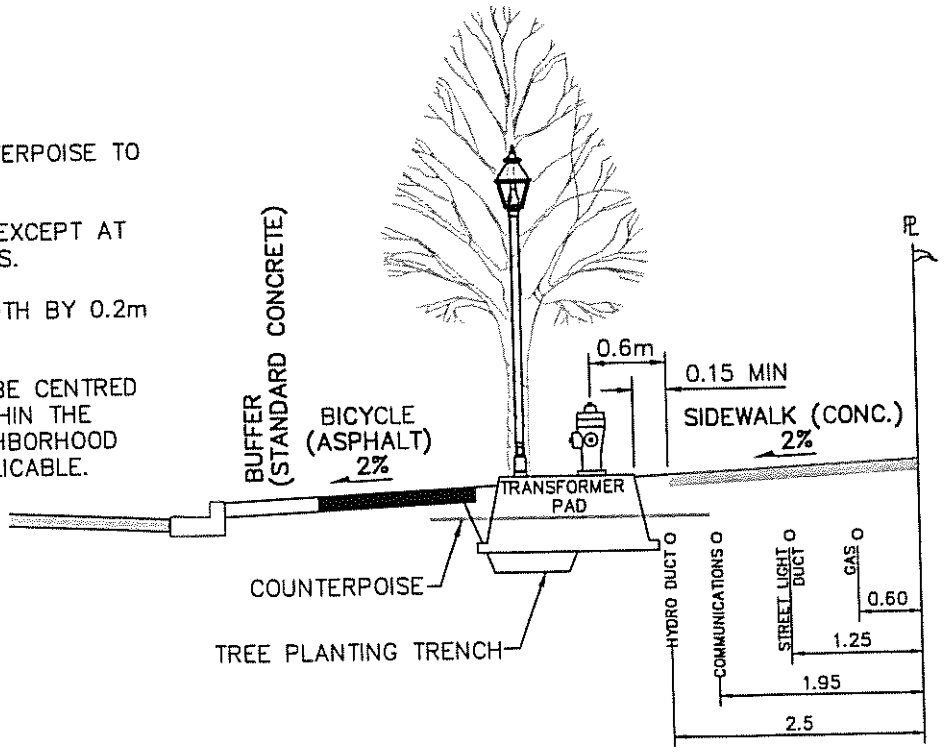
Coquitlam

STANDARD DETAIL DRAWINGS



NOTES:

1. UTILITIES WITHIN 2.5m OF COUNTERPOISE TO BE IN PLASTIC SLEEVE.
2. PLANTING TRENCH CONTINUOUS EXCEPT AT TRANSFORMERS & STREET LIGHTS.
3. SIDEWALK TO HAVE NARROW WIDTH BY 0.2m AT TRANSFORMER.
4. TREES AND STREET LIGHTS TO BE CENTRED IN BOULEVARD OR LOCATED WITHIN THE FURNISHING ZONE AS PER NEIGHBORHOOD DESIGN GUIDELINES WHERE APPLICABLE.

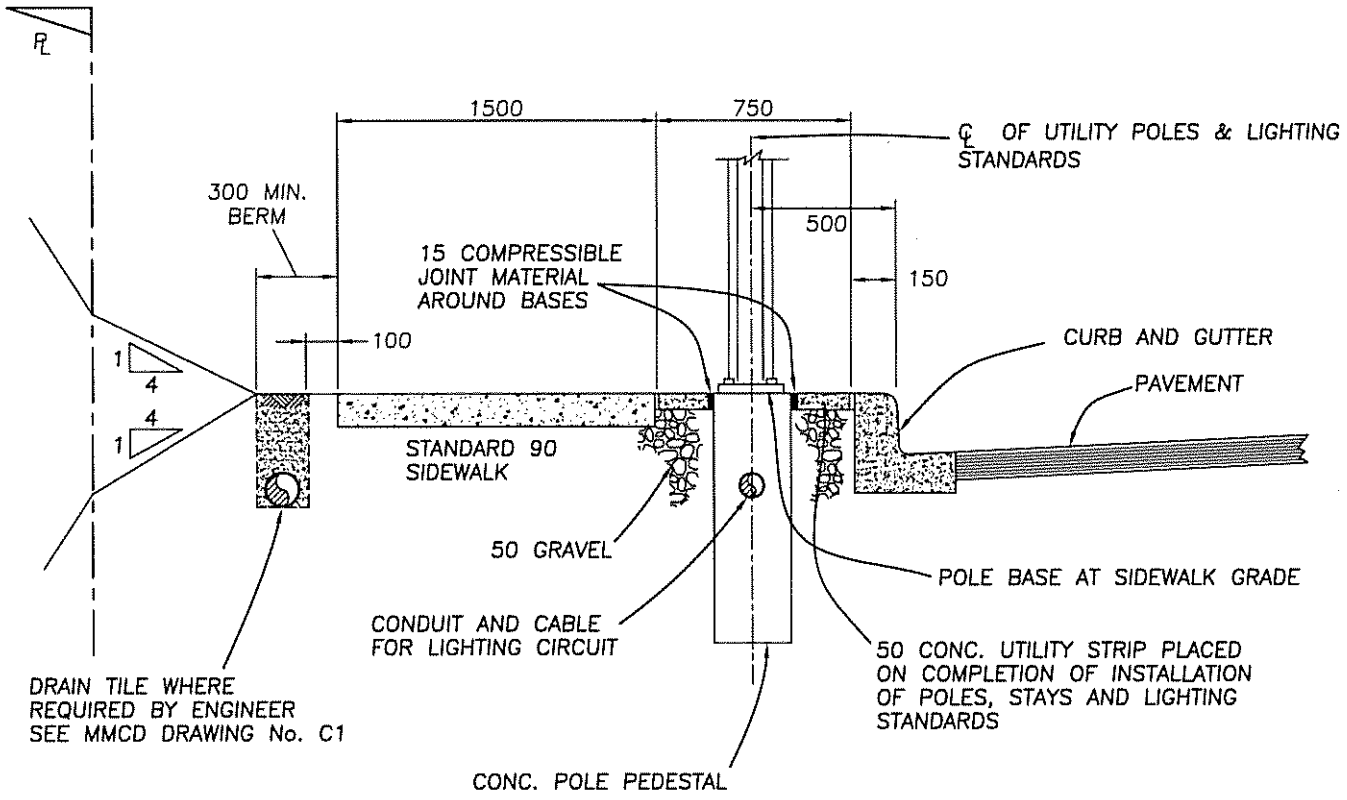


PLOTTED: 22-Jan-15

25.2m R.O.W. HIGHER DENSITY COMMUNITY COLLECTOR WITH CYCLE TRACK	DATE: JAN/2015 DRAWN: REY SCALE: N.T.S.

DRAWING NUMBER:

COQ-R26

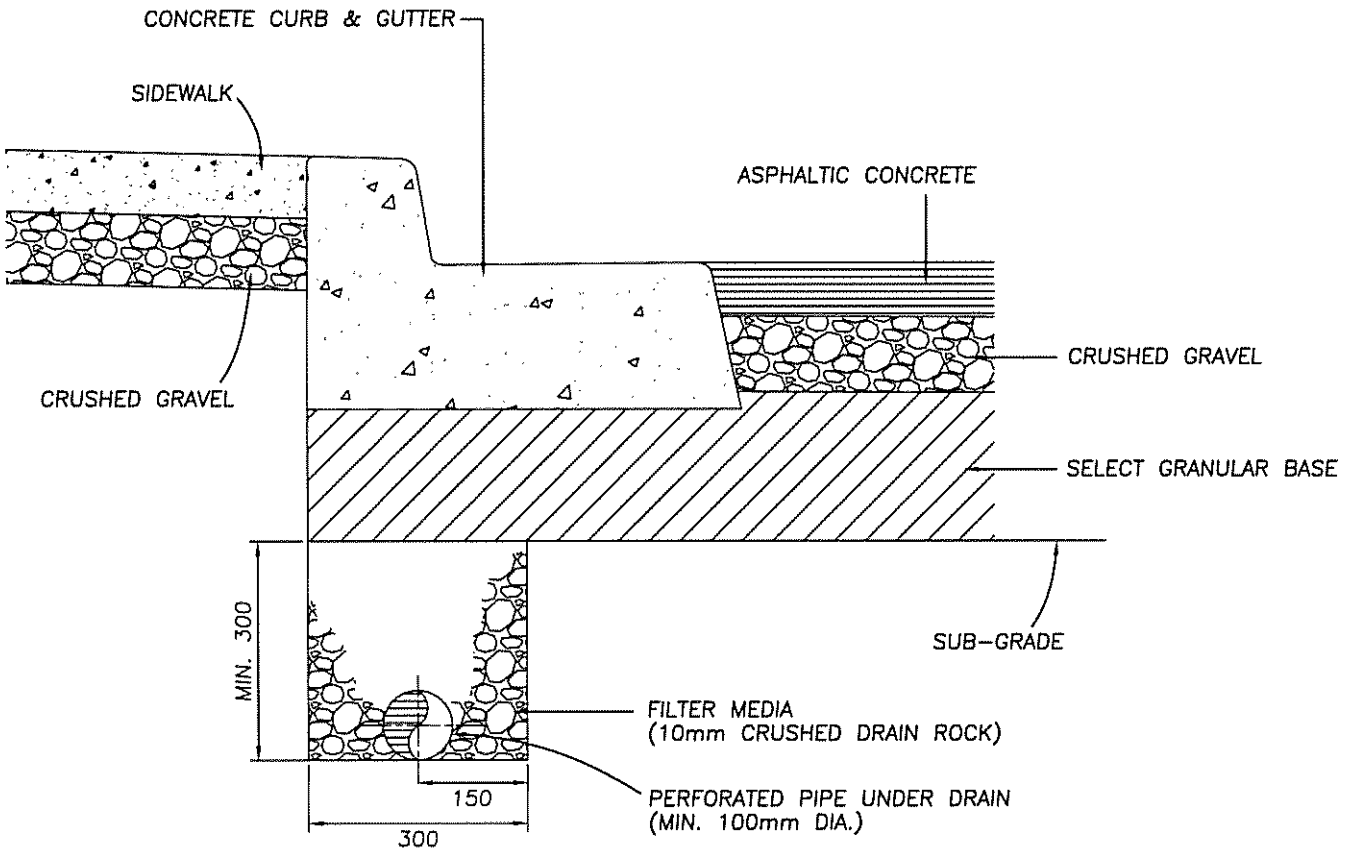


City of Coquitlam

BOULEVARD – SIDEWALK UTILITY STRIP

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: JUN 19/98		DRAWING NO.: COQ–C1			

FILE: COQ–C1.dwg



NOTES:

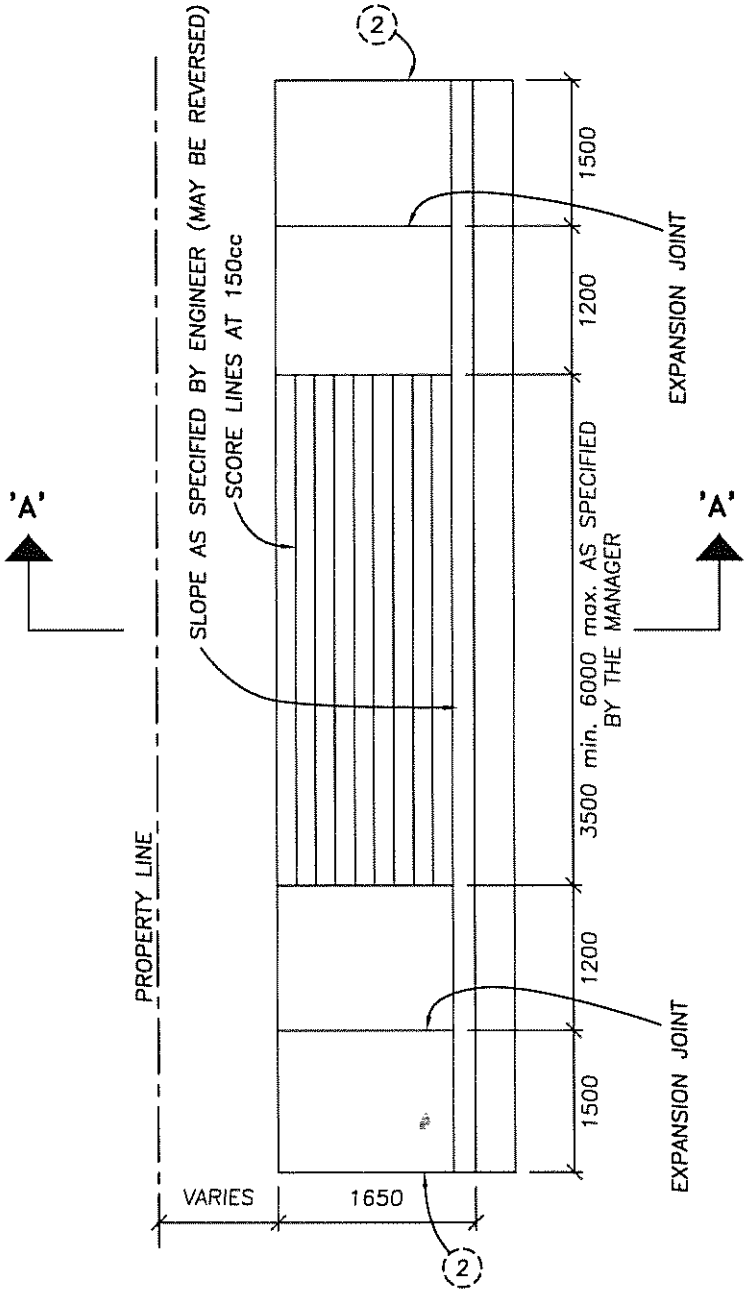
1. REFER TO CONSTRUCTION DRAWINGS FOR PROPOSED LOCATION AND DEPTH OF UNDERDRAINS.
2. WHEN THE CENTRE LINE ROAD GRADE IS 2% OR GREATER, UNDERDRAINS SHALL ONLY BE REQUIRED FOR A LENGTH OF 6 METERS ON THE UPSTREAM SIDE OF THE CATCH BASIN.
3. ALL UNDERDRAINS ARE TO BE CONNECTED TO CATCH BASINS OR THE STORM SEWER IF CATCH BASINS ARE NOT ACCESSIBLE.
4. IF THE SUB-GRADE IS SELF DRAINING IN THE OPINION OF THE ENGINEER, THE UNDERDRAIN INSTALLATION MAY BE WAIVED.

City of Coquitlam

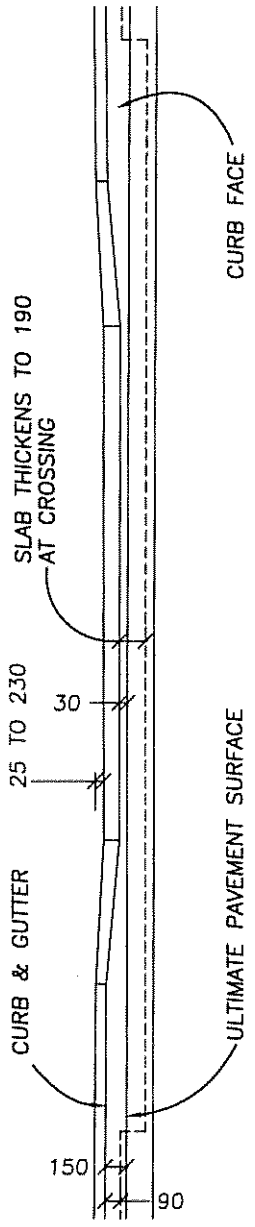
PERFORATED PIPE UNDERDRAIN

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 31/97		DRAWING NO.: COQ-C3A			

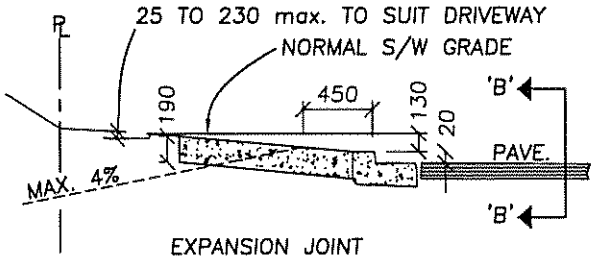
FILE: COQ-C3A.DWG



PLAN



FRONT ELEVATION
SECTION 'B–B'



SECTION 'A–A'

NOTE

1. WHERE DRIVEWAY IS AT LOWER GRADE THAN SIDEWALK, CROSSING SLOPES, BREAKOUT POINT AND D/W GRADE AS INDICATED BY DASHED LINES IN SECTION IF APPROVED BY THE MANAGER.

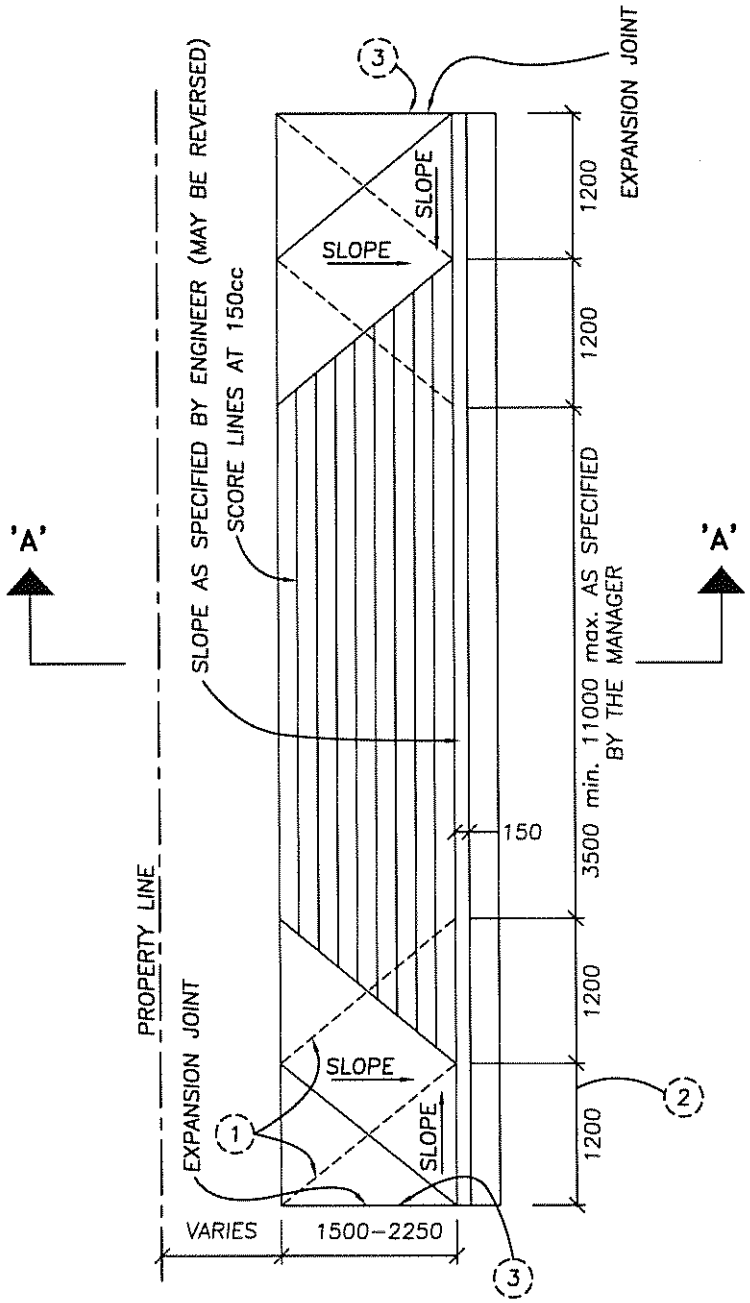
2. WHERE NEW CROSSING IS INSTALLED IN EXISTING SIDEWALK, BREAKOUT TO NEAREST TOOLED TRANSVERSE LINE.

City of Coquitlam

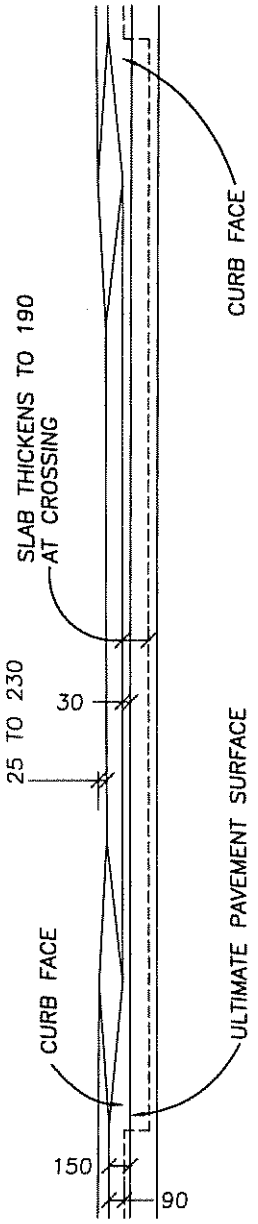
LOCAL, COLLECTOR
Crossing of Curb, Gutter and Sidewalk

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 21/97		DRAWING NO.: COQ–C7			

FILE: COQ–C7.DWG

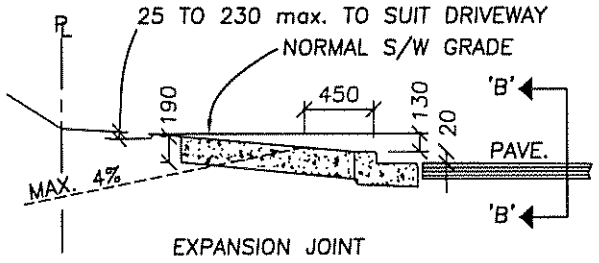


PLAN



FRONT ELEVATION

SECTION 'B–B'



SECTION 'A–A'

NOTE

(1) WHERE DRIVEWAY IS AT LOWER GRADE THAN SIDEWALK, CROSSING SLOPES SHALL BE REVERSED AS INDICATED BY DASHED LINES IN SECTION.

(2) FLARE REQUIRED ON EACH SIDE.

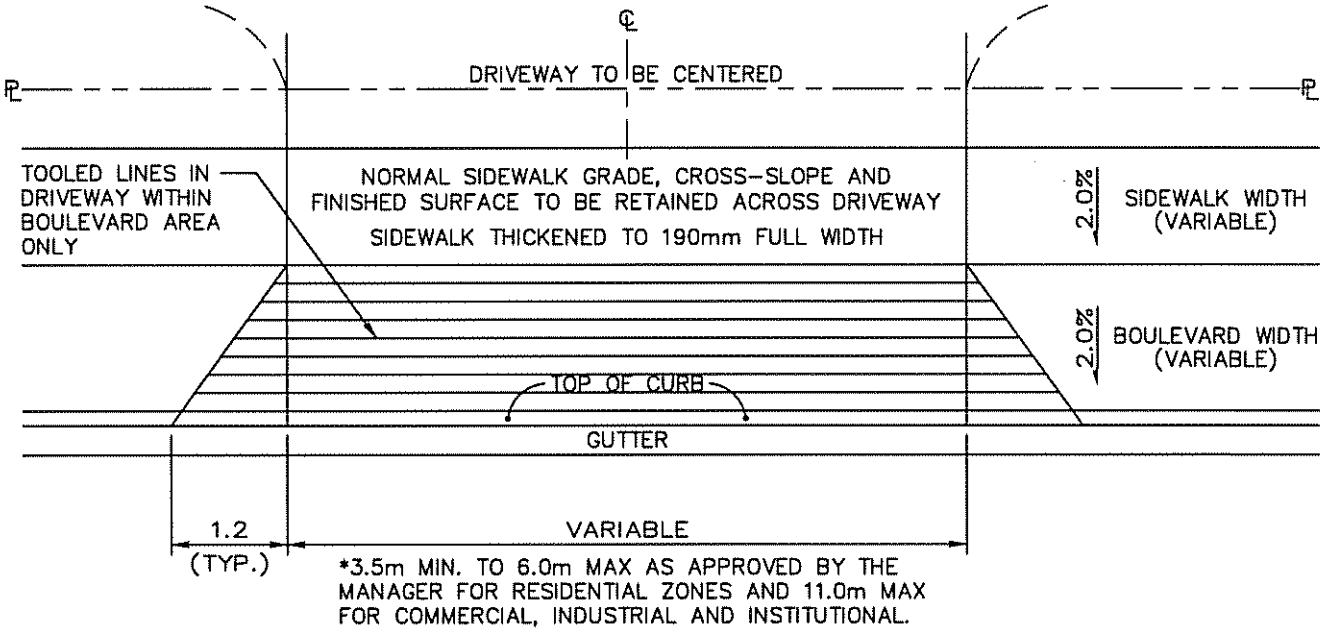
(3) WHERE NEW CROSSING IS INSTALLED IN EXISTING SIDEWALK, BREAKOUT TO NEAREST TOOLED TRANSVERSE LINE.

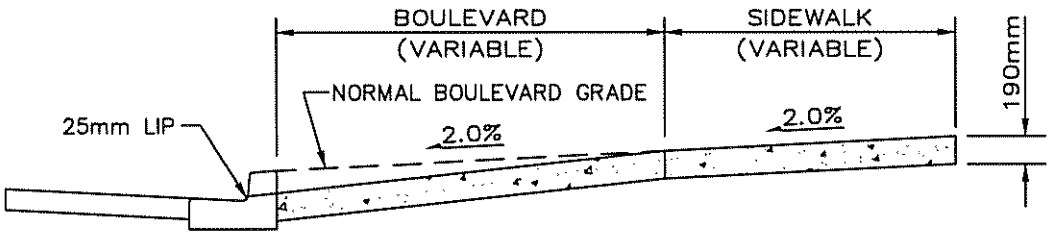
City of Coquitlam

ARTERIAL, INDUSTRIAL
Sidewalk Crossing with Driveway

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 21/97		DRAWING NO.: COQ–C7A			

LE COQ - C7A


℄
DRIVEWAY TO BE CENTERED
℄
℄
TOOLED LINES IN DRIVEWAY WITHIN BOULEVARD AREA ONLY
NORMAL SIDEWALK GRADE, CROSS-SLOPE AND FINISHED SURFACE TO BE RETAINED ACROSS DRIVEWAY
SIDEWALK THICKENED TO 190mm FULL WIDTH
2.0%
SIDEWALK WIDTH (VARIABLE)
2.0%
BOULEVARD WIDTH (VARIABLE)
TOP OF CURB
GUTTER
1.2
(TYP.)
VARIABLE
*3.5m MIN. TO 6.0m MAX AS APPROVED BY THE MANAGER FOR RESIDENTIAL ZONES AND 11.0m MAX FOR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL.



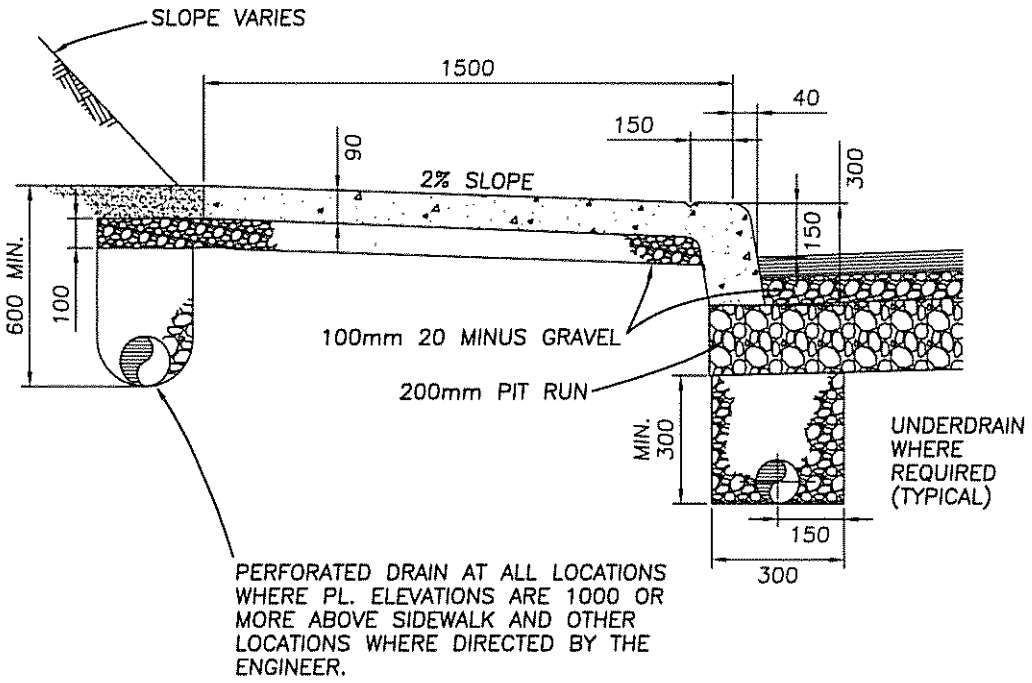
Destroy All Prints Bearing Rev. No. less than one indicated below

City of Coquitlam

TYPICAL CURB/SIDEWALK DRIVEWAY LETDOWN – SEPARATED SIDEWALK

REVISIONS			
DESIGNED:	DRAWN: R.D.	CHECKED:	PLOTTED:
SCALE: N.T.S.	DATE:	SHT. 1 OF 1	FILE: COQ-C7B

NOTE: All dimensions in metres



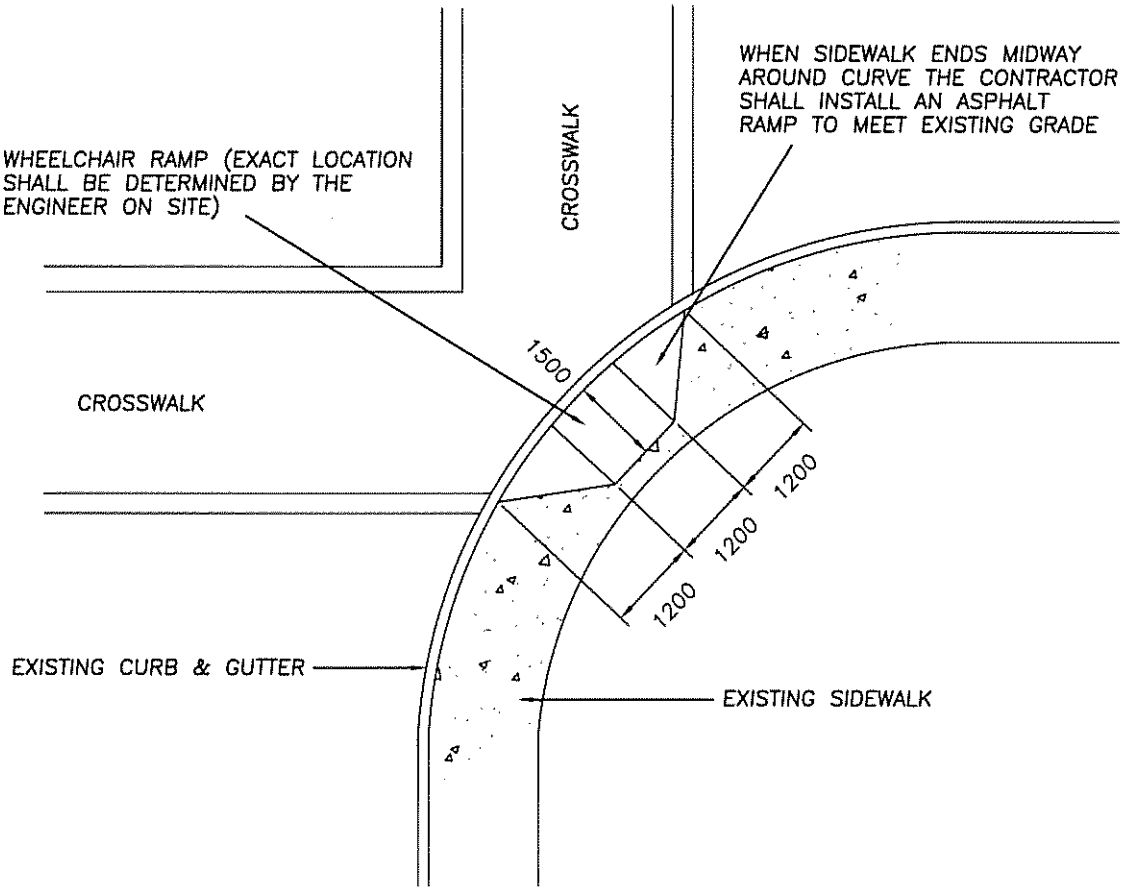
MONOLITHIC CURB SIDEWALK

City of Coquitlam

MONOLITHIC SIDEWALK

drawing # change			1	06/02		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 29/97		DRAWING NO.: COQ-C8			

FILE: COQ-C8.DWG


WHEN SIDEWALK ENDS MIDWAY AROUND CURVE THE CONTRACTOR SHALL INSTALL AN ASPHALT RAMP TO MEET EXISTING GRADE
WHEELCHAIR RAMP (EXACT LOCATION SHALL BE DETERMINED BY THE ENGINEER ON SITE)
CROSSWALK
CROSSWALK
1500
1200
1200
1200
EXISTING CURB & GUTTER
EXISTING SIDEWALK

NOTES

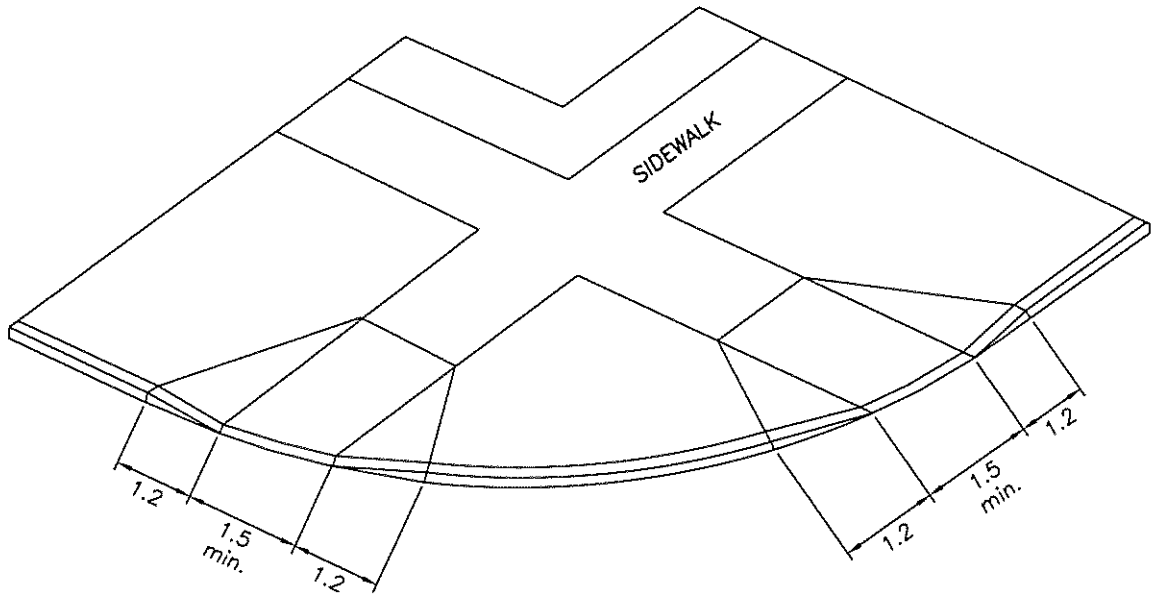
1. CONTRACTOR SHALL BREAKOUT ENTIRE SIDEWALK PANELS AS REQUIRED. SIDEWALK PANELS MUST BE CUT AT SIDEWALK JOINTS. CUTS WILL NOT BE PERMITTED IN THE MIDDLE OF SIDEWALKS.
2. CONTRACTOR SHALL CUT AND REPAIR ENTIRE CURB SECTIONS BACK TO NEAREST CURB CONTRACTION JOINT.
3. CURB AND GUTTER SHALL BE POURED SEPARATELY FROM SIDEWALK.
4. SIDEWALK AND CURB SHALL BE SEPARATED WITH APPROVED CONTRACTION JOINT MATERIAL.
5. WHERE SIDEWALK PANEL IS CUT AT SIDEWALK JOINT IT MUST BE CLEANED AND CONTRACTION JOINT MATERIAL INSTALLED TO SEPARATE EXISTING SIDEWALK FROM NEW SIDEWALK.

City of Coquitlam

WHEELCHAIR RAMP DETAIL

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 31/97		DRAWING NO.: COQ-C9			

FILE: COQ-C9.DWG



TYPE 'B' SEPARATE SIDEWALK

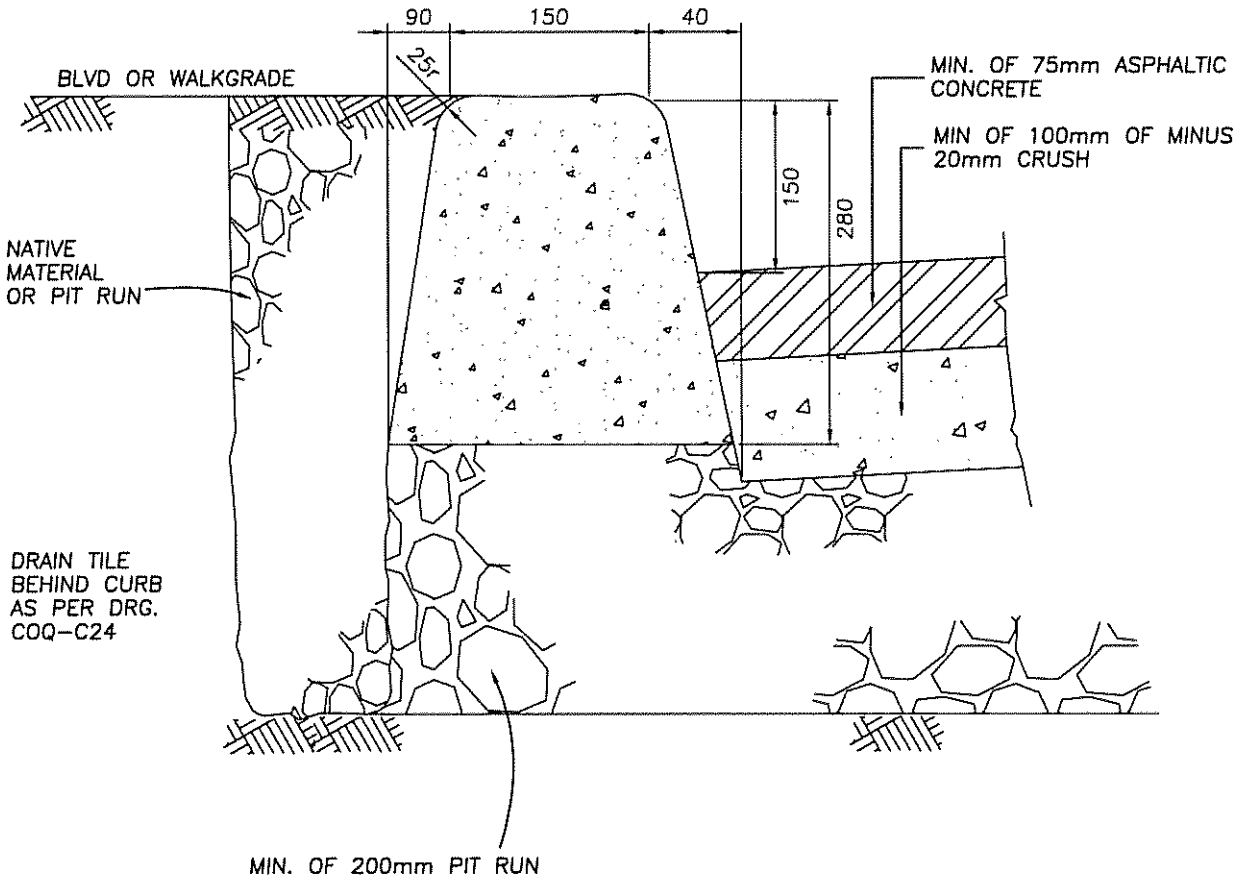
RADIUS GREATER THAN OR EQUAL TO 12.0m

FILE: COQ-C9A.DWG

City of Coquitlam

TYPE B WHEELCHAIR RAMP

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 31/97		DRAWING NO.: COQ-C9A			



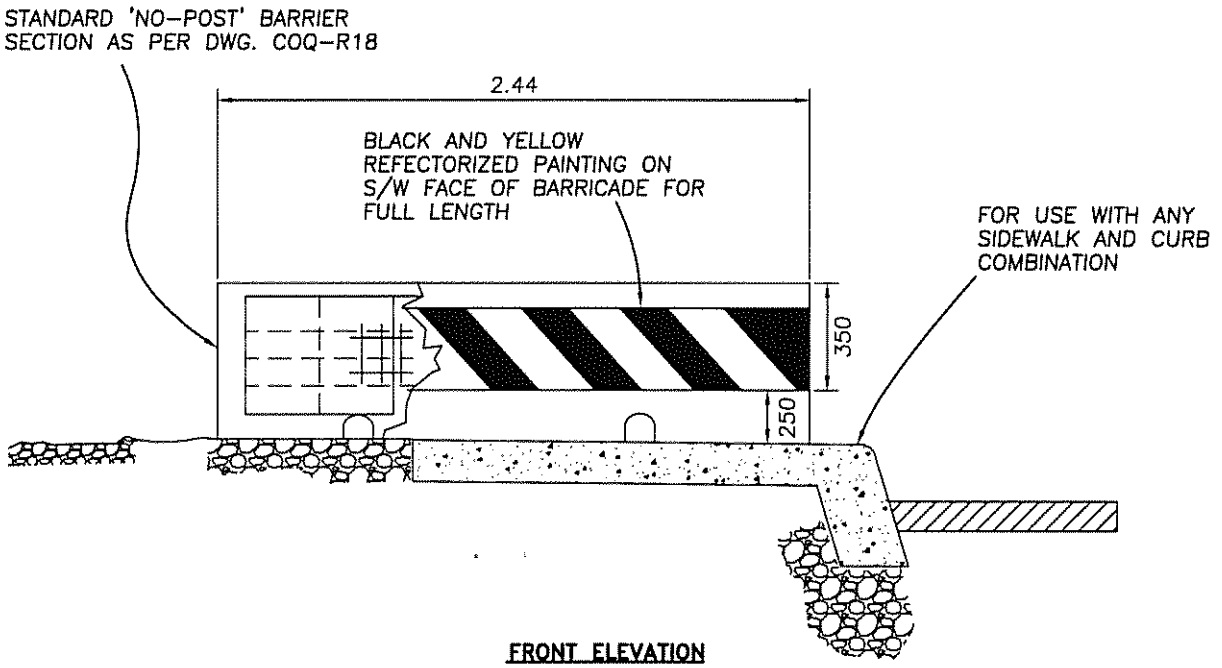
CURB ON GRAVEL BASE NO SIDEWALK

City of Coquitlam

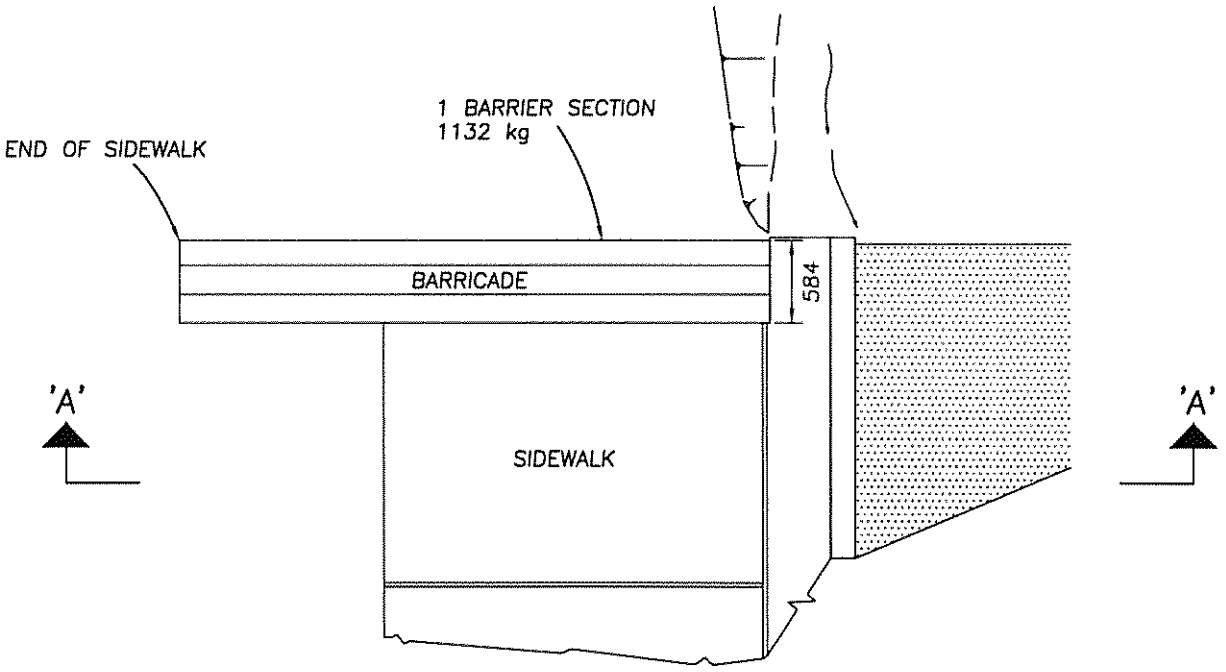
CURB ON GRAVEL BASE

drawing # change			1	06/02		
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 29/97		DRAWING NO.: COQ-C10A			

FILE: COQ-C10A.DWG



FRONT ELEVATION
'A-A'



PLAN

City of Coquitlam

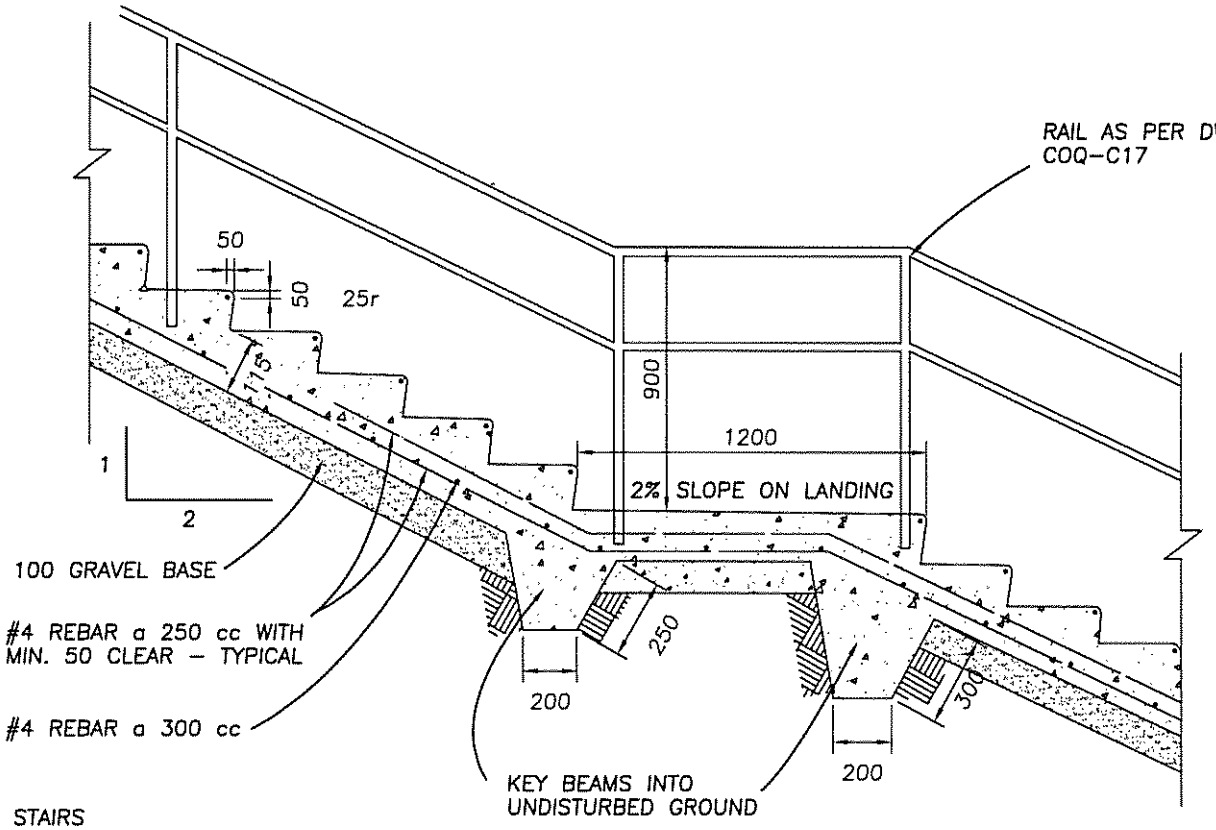
PRECAST REINFORCED CONCRETE BARRIER FOR SIDEWALK END

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: OCT 23/97		DRAWING NO.: COQ-C11			

FILE: COQ-C11.DWG

NOTES:

1. MAX. WALKWAY GRADIENT – 10%
2. RAILING AS PER COQ–C14 REQUIRED ON STAIRWAY.
3. PEDESTRIAN BAFFLES AT BOTH ENDS OF WALKWAY.
4. MAX. 12 RISERS PER FLIGHT BETWEEN LANDING.



STAIRS
RISE –175
RUN –300 2% SLOPE
1– #4 NOSE BAR –TYP.
MIN. 50 CLEAR

LANDING & STAIR DETAIL

City of Coquitlam

STAIRWAY DETAILS

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: NOV 3/97		DRAWING NO.: COQ–C15			

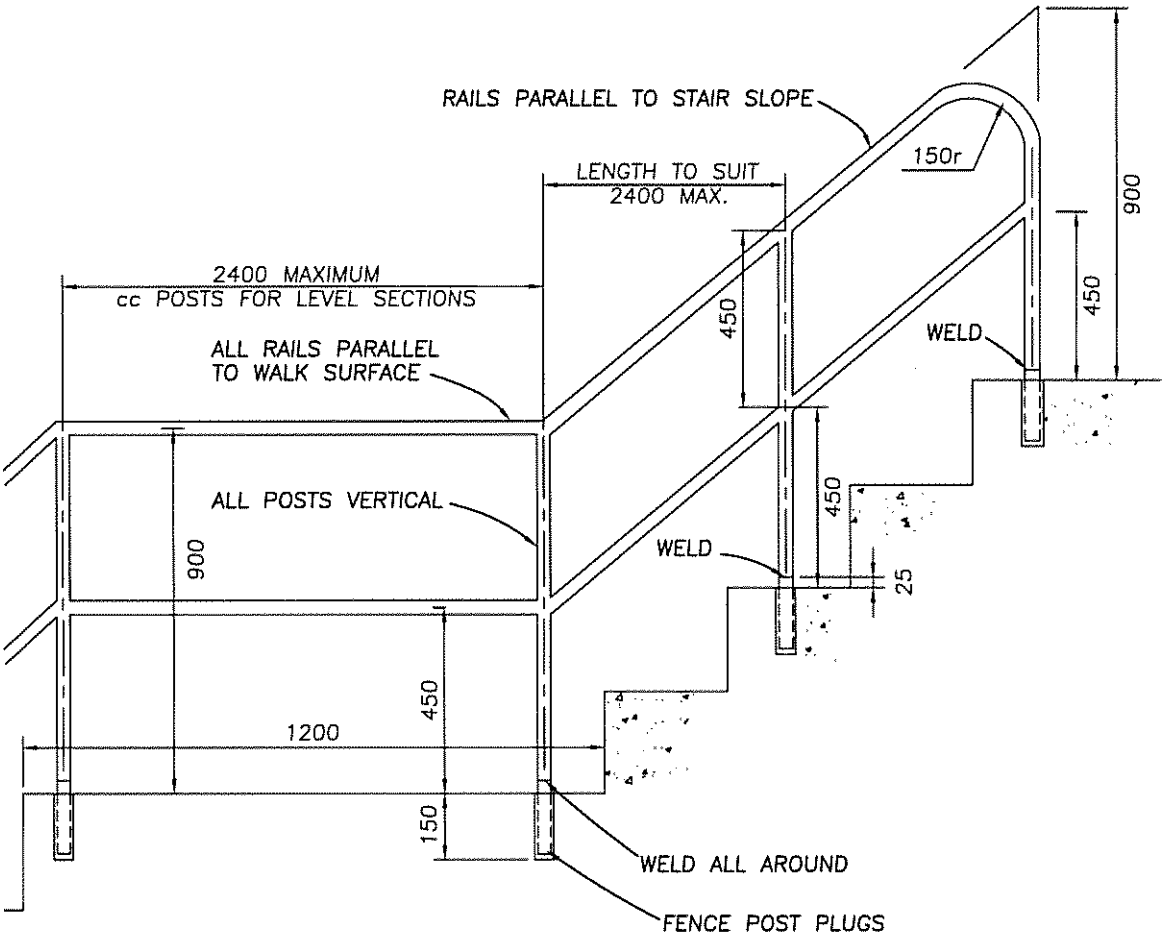
FILE: COQ–C15.DWG

HANDRAILS SHALL BE FABRICATED FROM 42mm Dia x 3.56mm WALL STANDARD GALVD. STEEL PIPE.

ALL FIELD WELDS SHALL BE FILED SMOOTH.

ALL BENDS ARE SMOOTH CIRCULAR CURVES.

HANDRAILS REQUIRED ON BOTH SIDES OF STAIRS.



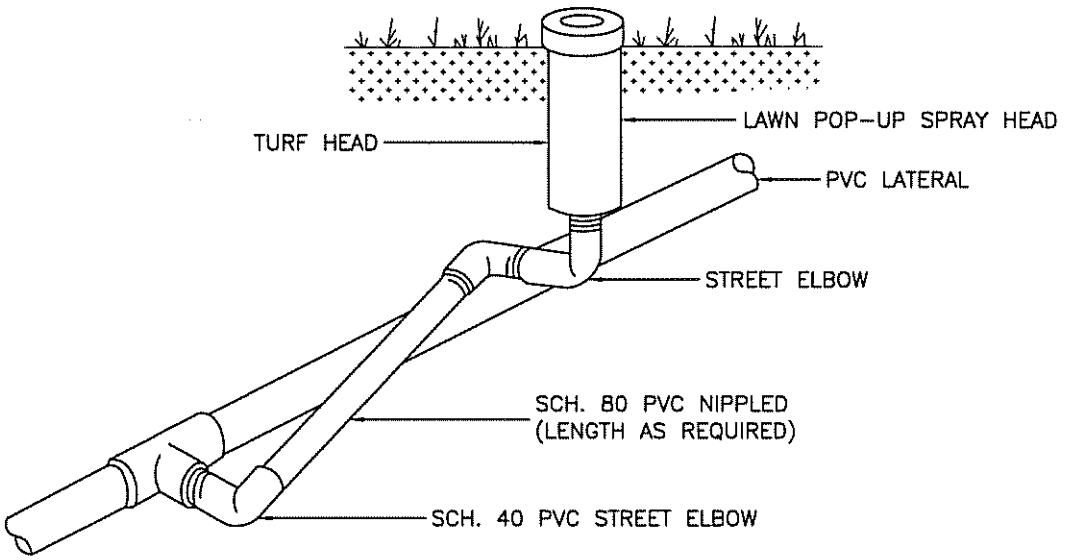
TYPICAL HANDRAIL

City of Coquitlam

TYPICAL HANDRAIL DETAILS FOR STAIRS

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: NOV 3/97		DRAWING NO.: COQ-C17			

FILE: COQ-C17.DWG

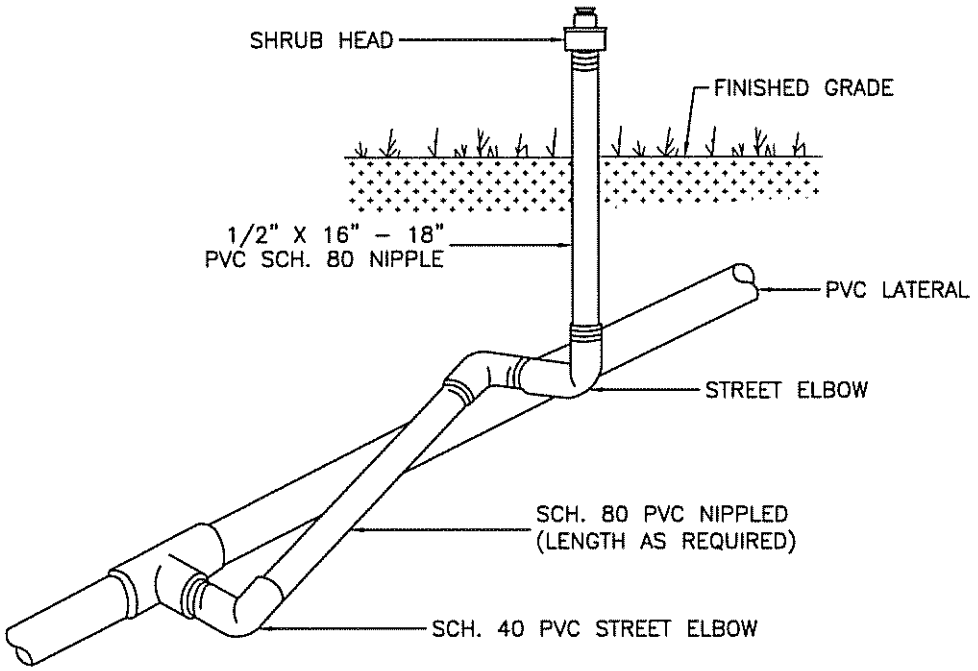


City of Coquitlam

SMALL TURF POP-UP ON TRIPLE SWING JOINT

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 11/97		DRAWING NO.: COQ-I01			

FILE: COQ-I01.DWG

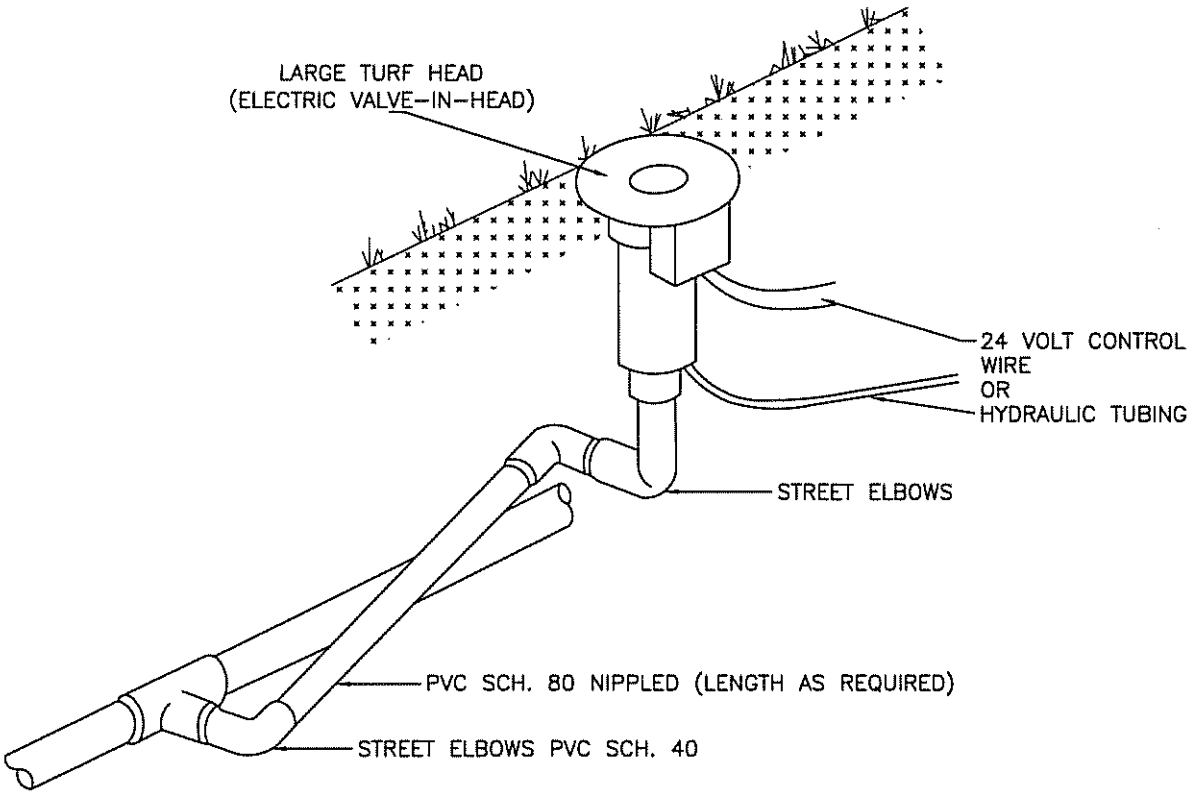


City of Coquitlam

SHRUB HEAD DETAIL

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 11/97		DRAWING NO.: COQ–I02			

FILE: COQ–I02.DWG

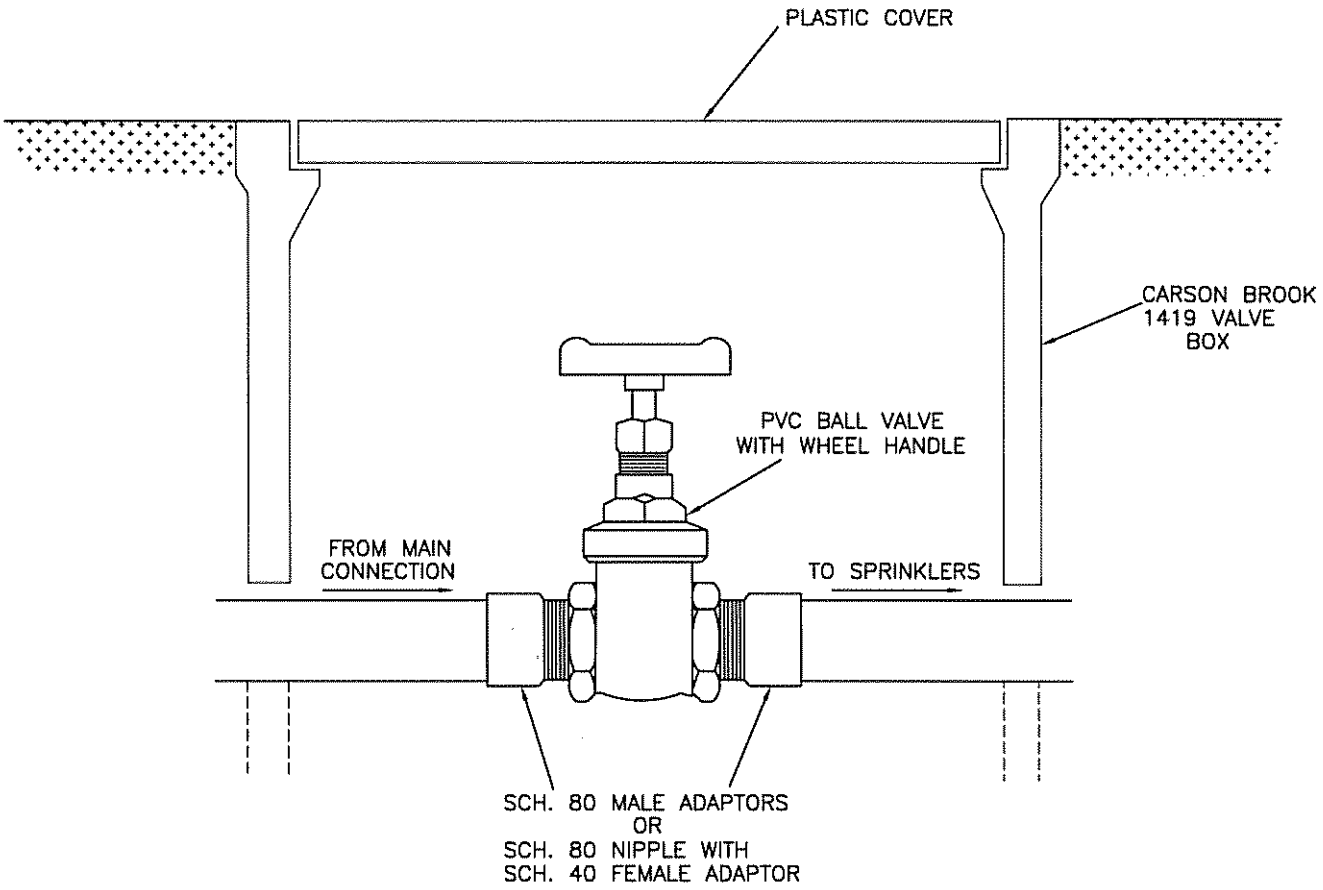


City of Coquitlam

VALVE–IN–HEAD ROTOR

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 11/97		DRAWING NO.: COQ–103			

FILE: COQ–103.DWG

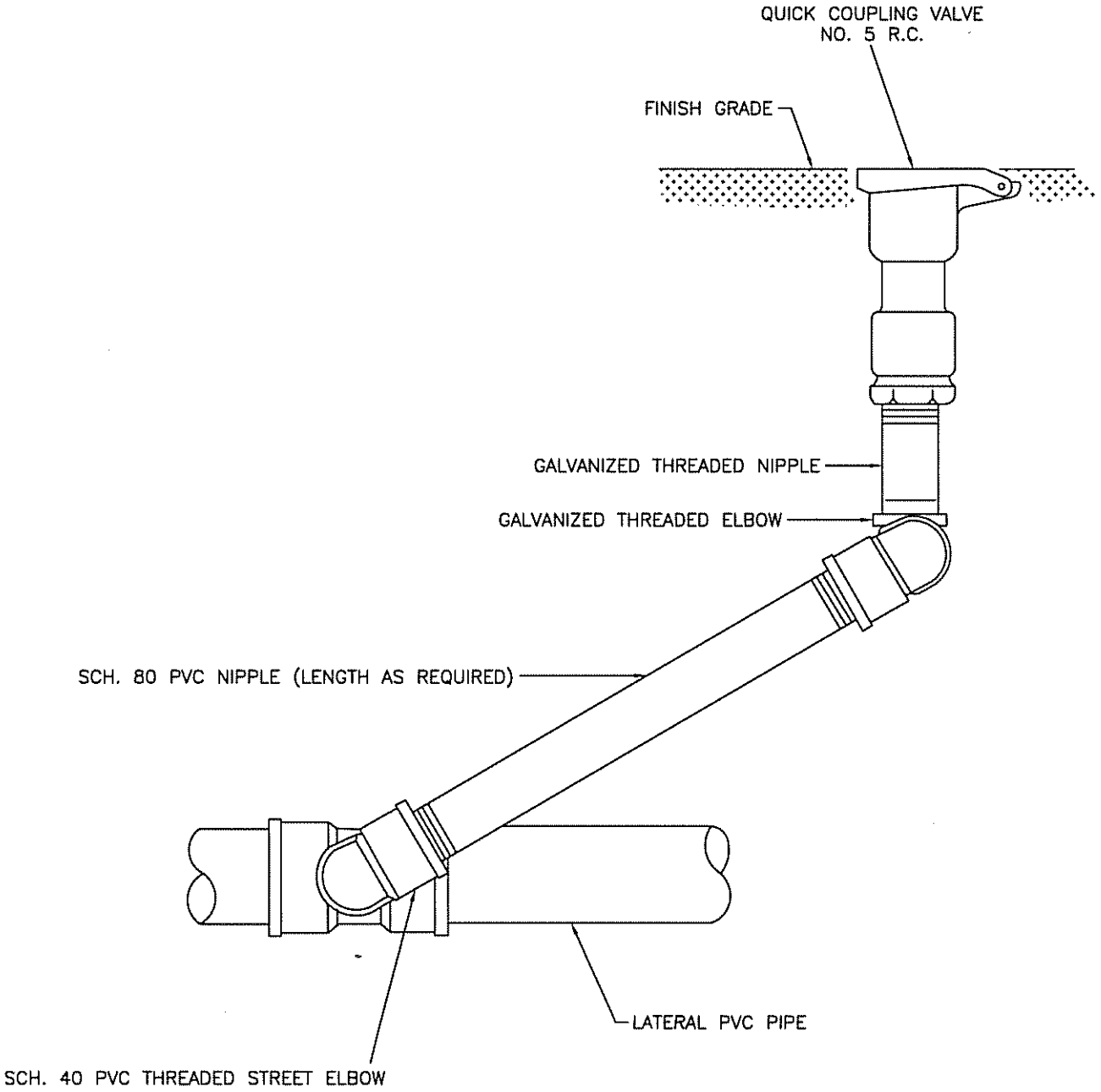


City of Coquitlam

ISOLATION VALVE

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 11/97		DRAWING NO.: COQ-104			

FILE: COQ-104.DWG

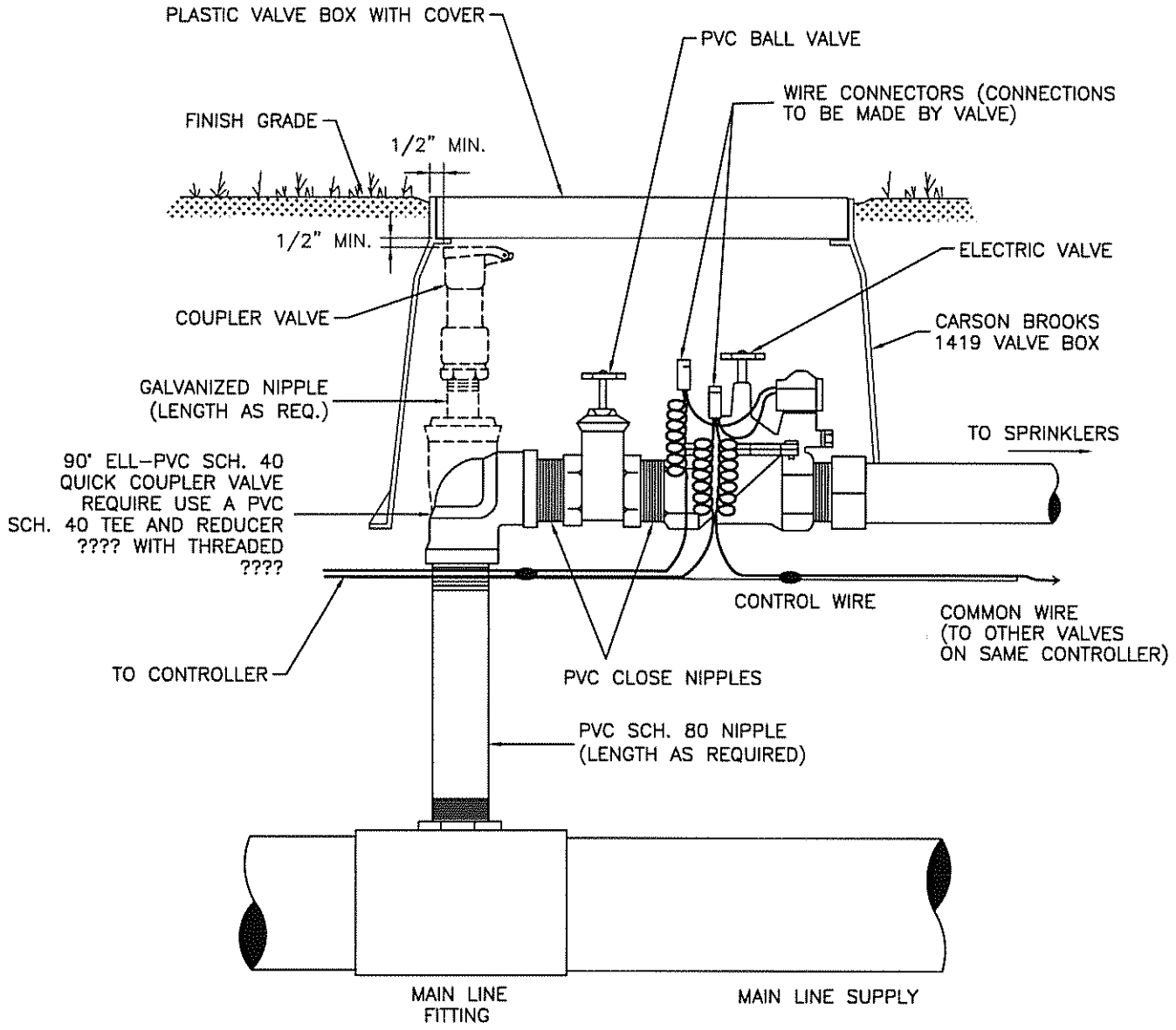


City of Coquitlam

QUICK COUPLING VALVE

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 12/97		DRAWING NO.: COQ-105			

FILE: COQ-105.DWG


PLASTIC VALVE BOX WITH COVER
PVC BALL VALVE
WIRE CONNECTORS (CONNECTIONS TO BE MADE BY VALVE)
FINISH GRADE
1/2" MIN.
1/2" MIN.
ELECTRIC VALVE
COUPLER VALVE
CARSON BROOKS 1419 VALVE BOX
GALVANIZED NIPPLE (LENGTH AS REQ.)
TO SPRINKLERS
90° ELL–PVC SCH. 40 QUICK COUPLER VALVE REQUIRE USE A PVC SCH. 40 TEE AND REDUCER ???? WITH THREADED ????
CONTROL WIRE
COMMON WIRE (TO OTHER VALVES ON SAME CONTROLLER)
TO CONTROLLER
PVC CLOSE NIPPLES
PVC SCH. 80 NIPPLE (LENGTH AS REQUIRED)
MAIN LINE FITTING
MAIN LINE SUPPLY

NOTE: ALL THREADED CONNECTIONS TO HAVE 2 WRAPS OF TEFLON TAPE

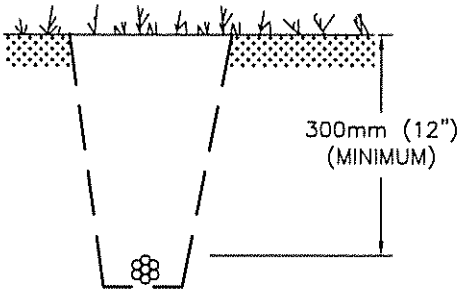
City of Coquitlam

AUTOMATIC VALVE
RAINBIRD P.E.B. SERIES OR EQUIVALENT

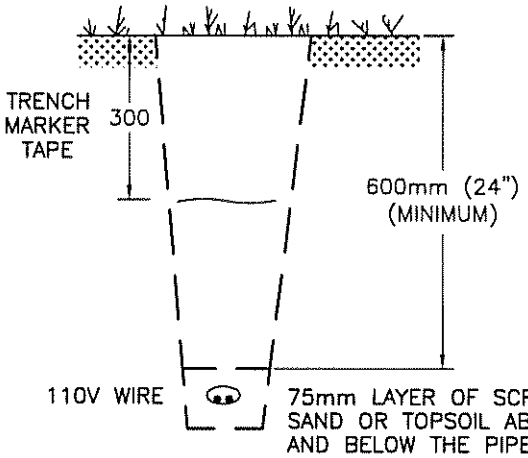
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 15/97		DRAWING NO.: COQ–I06			

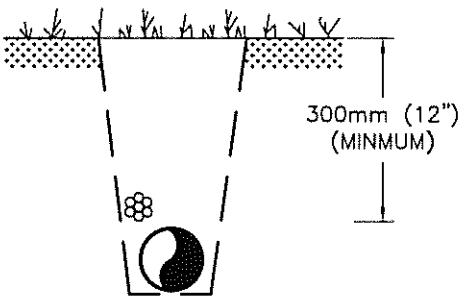
FILE: COQ–I06.DWG

24 VAC CONTROL WIRE

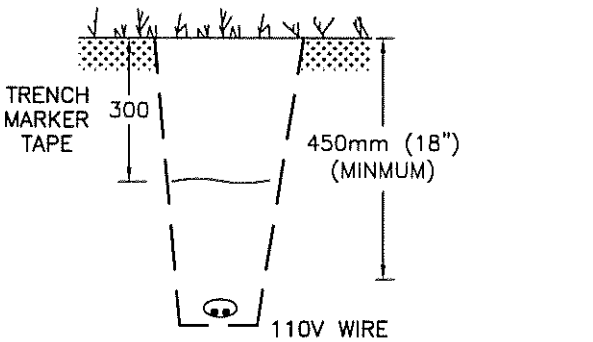


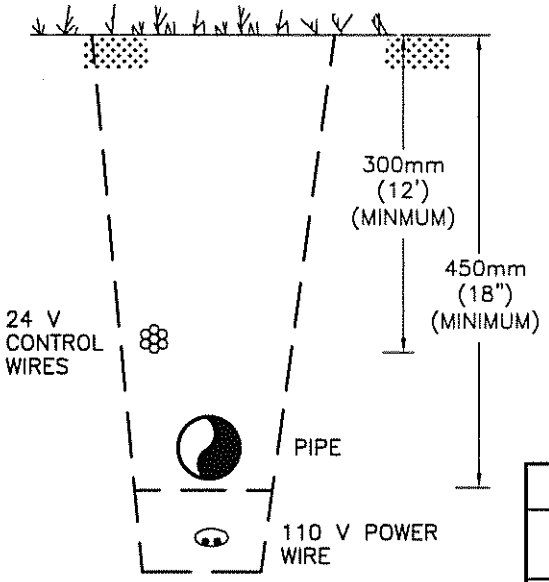
VAC POWER WIRING



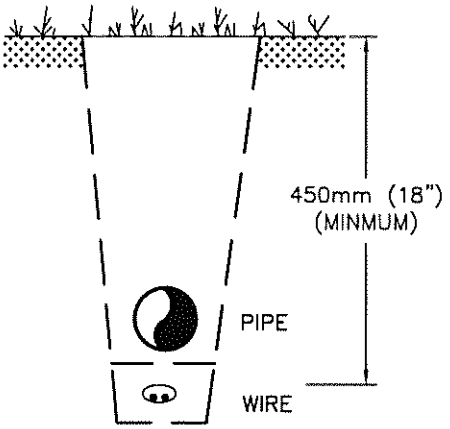


24 VAC CONTROL WIRE WITH IRRIGATION PIPE





24 VAC CONTROL WIRE, IRRIGATION PIPE AND
110 VAC POWER WIRE



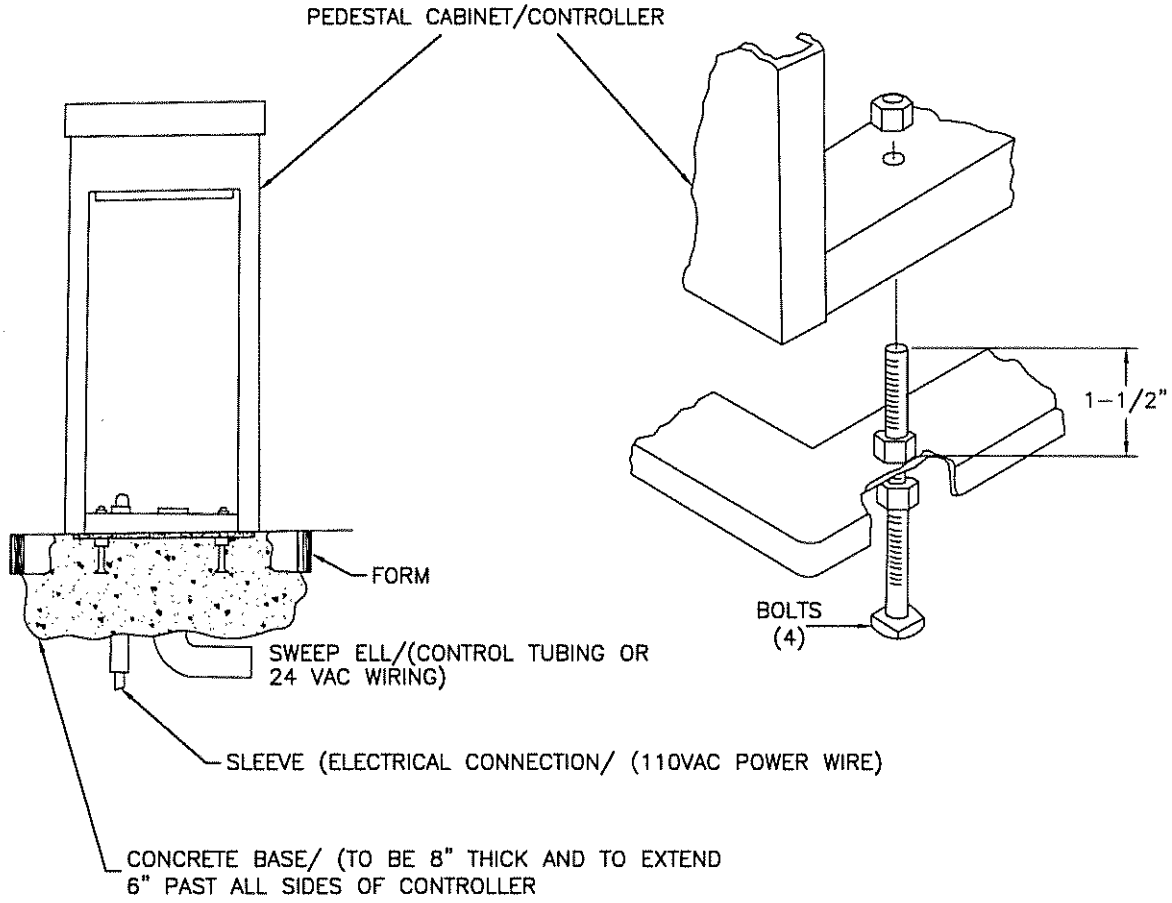
NOTE: 110VAC POWER WIRE BEDDED IN
150mm SCREENED SAND OR TOPSOIL

FILE: COQ-107.DWG

City of Coquitlam

IRRIGATION TRENCH DETAILS

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 15/97		DRAWING NO.: COQ-107			



TYPICAL INSTALLATION DETAIL

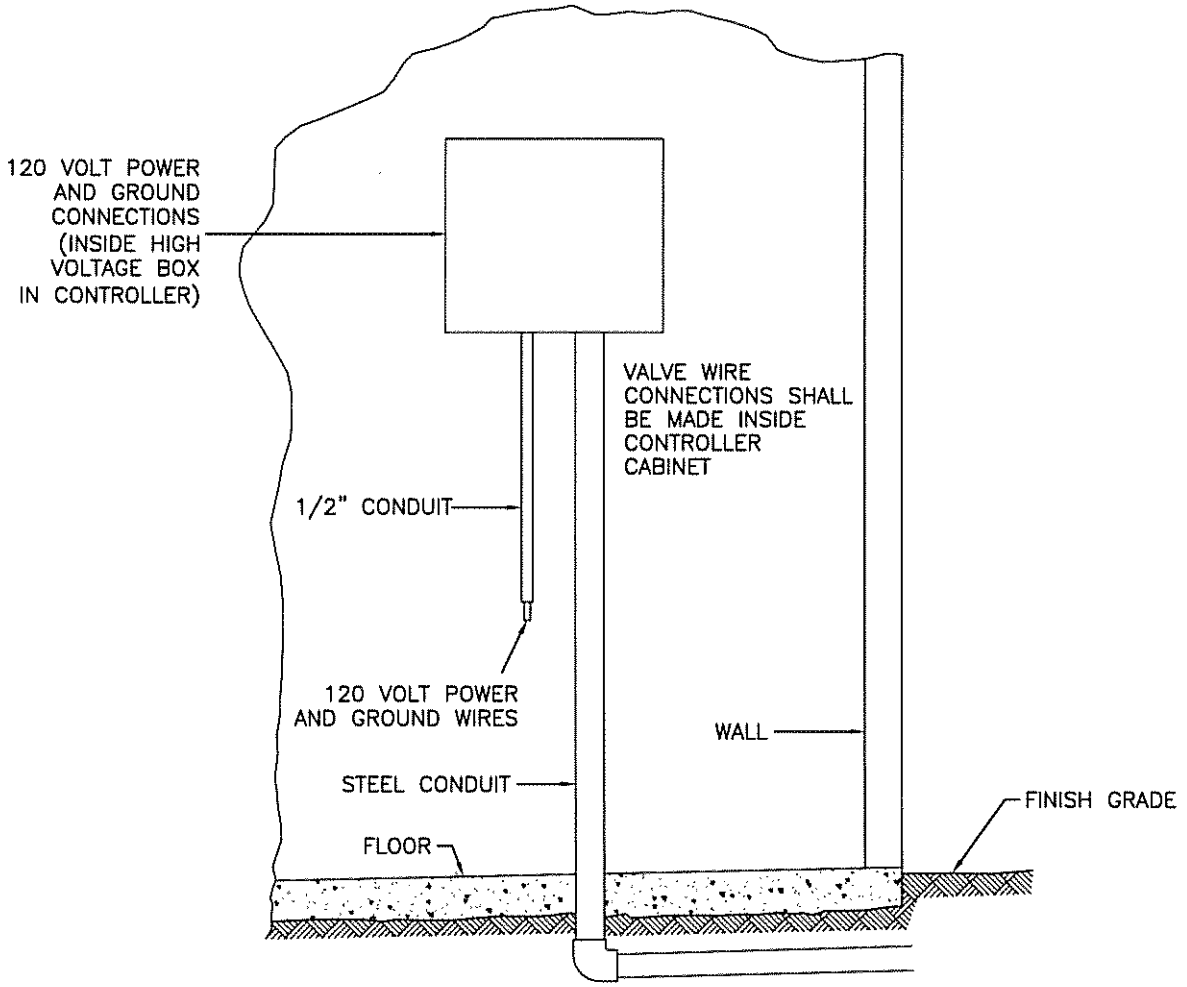
City of Coquitlam

CONTROLLER INSTALLATION
(PEDESTAL MOUNT)

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 16/97		DRAWING NO.: COQ-108			

FILE: COQ-108.DWG

NOTE: ALL WIRING TO BE INSTALLED AS PER LOCAL CODE

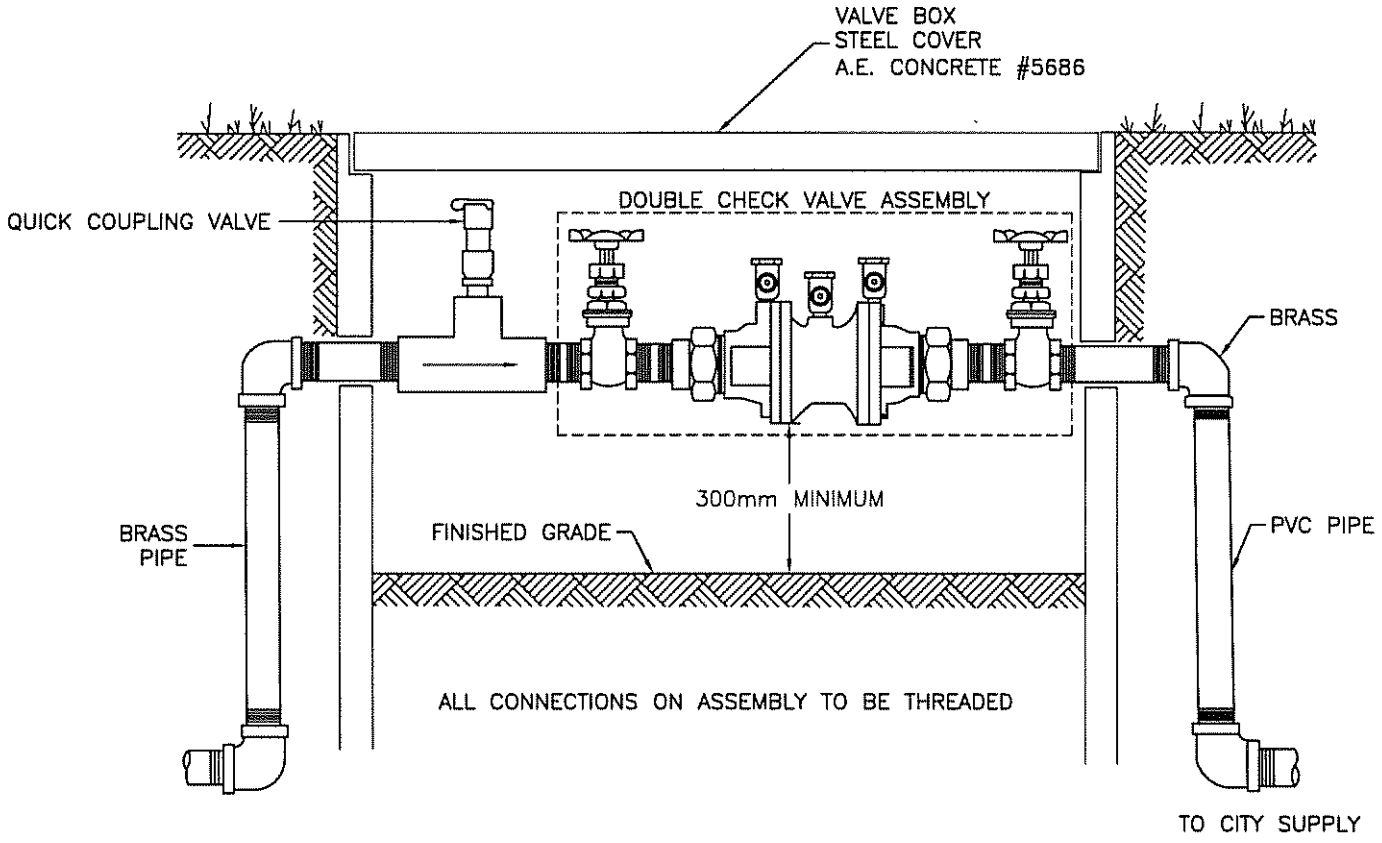

120 VOLT POWER AND GROUND CONNECTIONS (INSIDE HIGH VOLTAGE BOX IN CONTROLLER)
VALVE WIRE CONNECTIONS SHALL BE MADE INSIDE CONTROLLER CABINET
1/2" CONDUIT
120 VOLT POWER AND GROUND WIRES
WALL
STEEL CONDUIT
FINISH GRADE
FLOOR

City of Coquitlam

CONTROLLER INSTALLATION (WALL MOUNT)

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 16/97		DRAWING NO.: COQ-109			

FILE: COQ-109.DWG

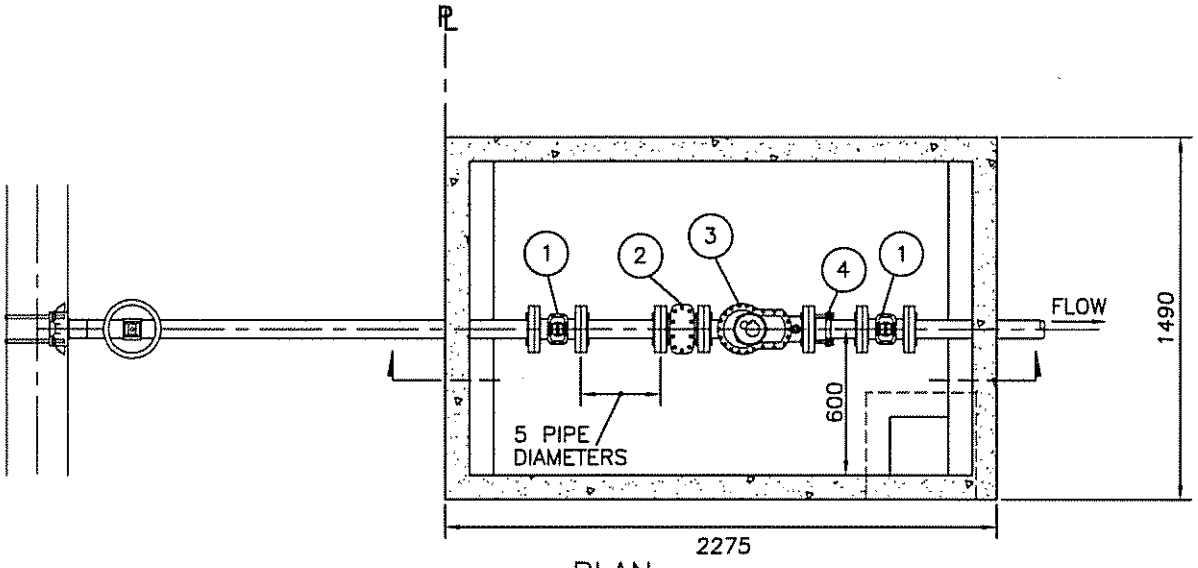


City of Coquitlam

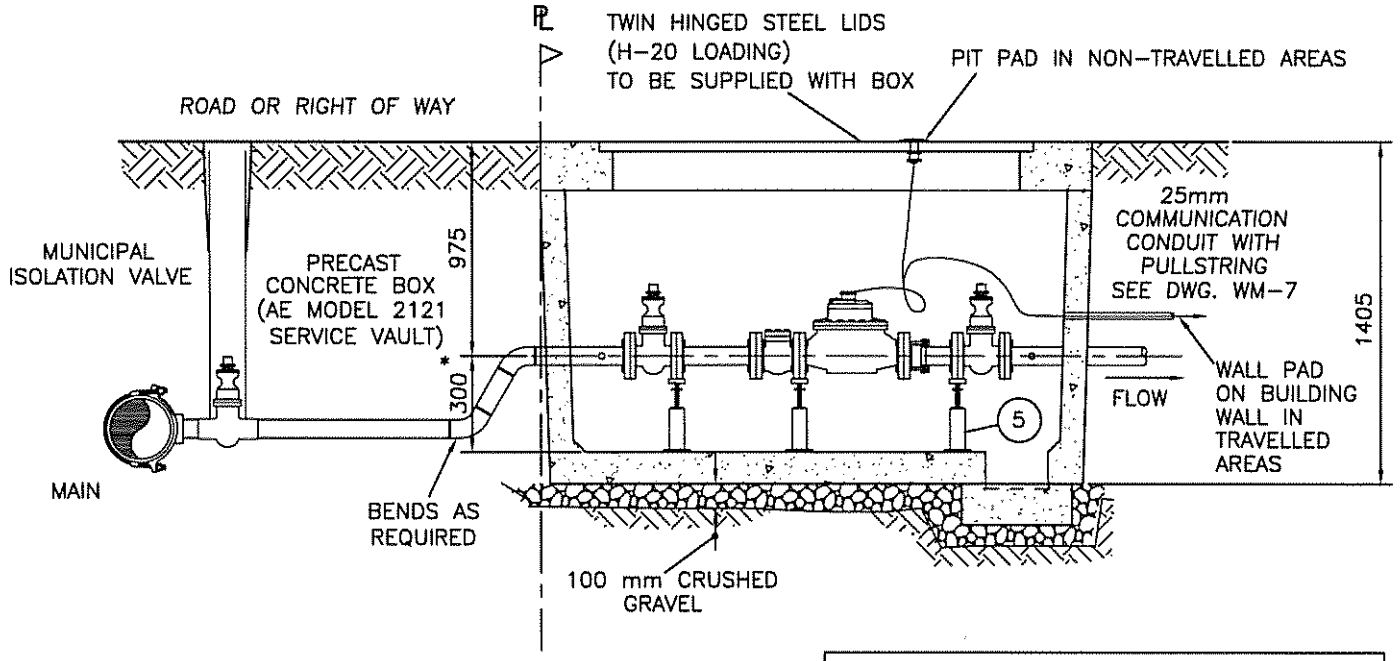
DOUBLE CHECK ASSEMBLY
(MODEL: WATT 007QT)

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 17/97		DRAWING NO.: COQ-I10			

FILE: COQ-I10.DWG



PLAN



SECTION

No.	DESCRIPTION
1	GATE VALVE (ISOLATION)
2	STRAINER
3	METER, NEPTUNE OR SENSUS
4	MECHANICAL FLANGE ADAPTOR
5	ADJUSTABLE PIPE STANDS

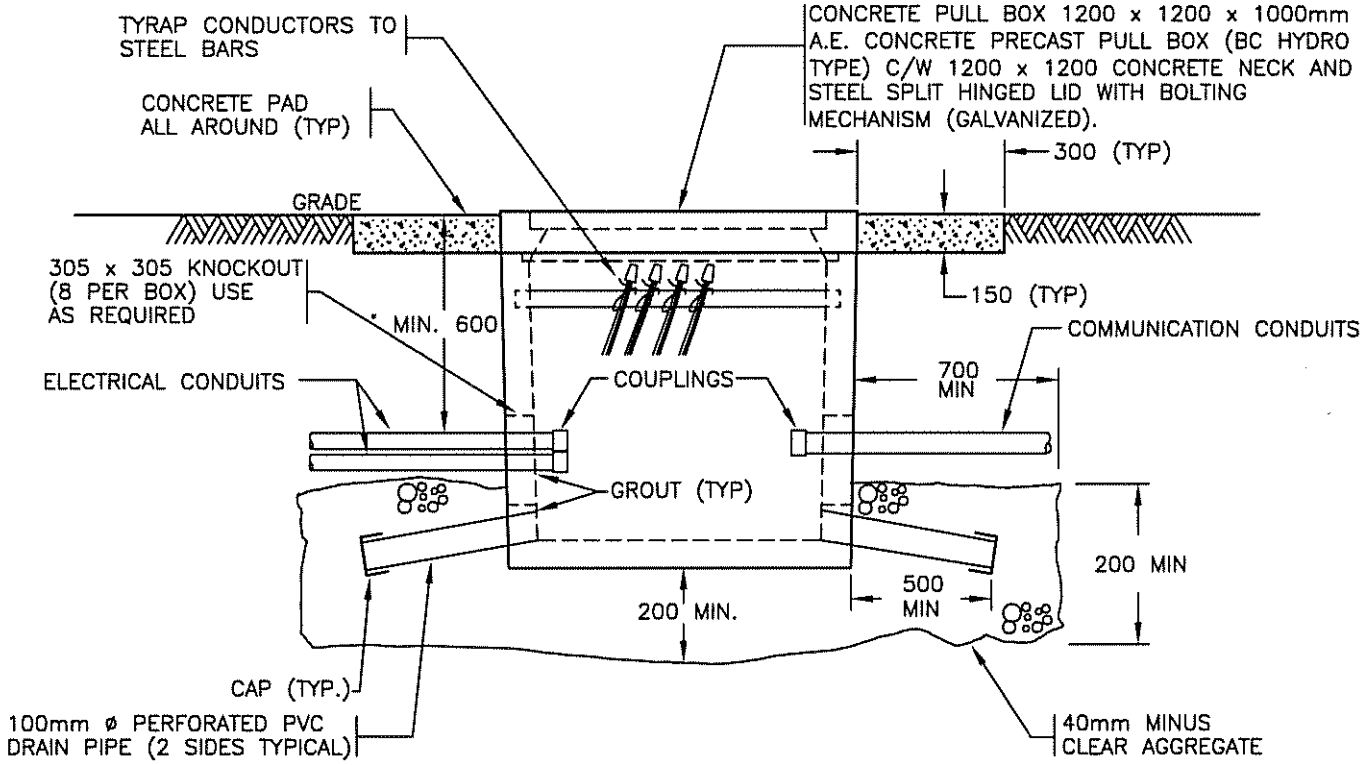
NOTES:
PIPE CONNECTIONS TO BE THREADED, FLANGED OR COMPRESSION.
ALL PIPE TO BE BRASS, TYPE 'K' COPPER TUBE OR WELDED STEEL.
**METER MAY BE PLACED ON FLOOR OF VAULT.*

Coquitlam Water Utility

75 mm ø COMPOUND METER INSTALLATION FOR IRRIGATION ONLY

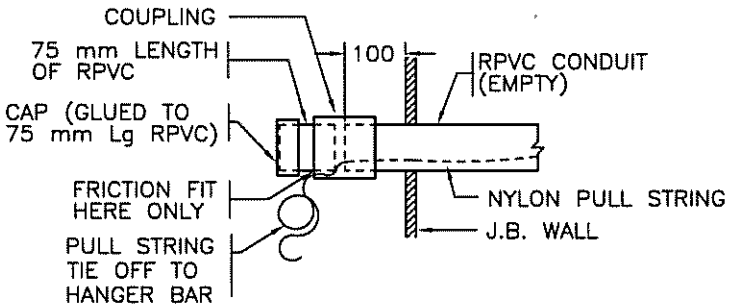
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY:	DRAWN BY: A.S.K.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: DEC 17/97		DRAWING NO.: COQ-I11			

FILE: COQ-I11

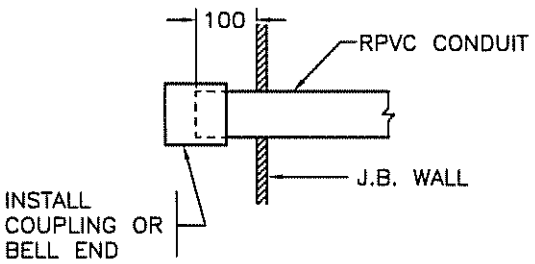

TYRAP CONDUCTORS TO STEEL BARS
CONCRETE PAD ALL AROUND (TYP)
CONCRETE PULL BOX 1200 x 1200 x 1000mm A.E. CONCRETE PRECAST PULL BOX (BC HYDRO TYPE) C/W 1200 x 1200 CONCRETE NECK AND STEEL SPLIT HINGED LID WITH BOLTING MECHANISM (GALVANIZED).
300 (TYP)
GRADE
150 (TYP)
305 x 305 KNOCKOUT (8 PER BOX) USE AS REQUIRED
MIN. 600
COMMUNICATION CONDUITS
ELECTRICAL CONDUITS
COUPLINGS
700 MIN
GROUT (TYP)
200 MIN
500 MIN
200 MIN.
CAP (TYP.)
100mm ø PERFORATED PVC DRAIN PIPE (2 SIDES TYPICAL)
40mm MINUS CLEAR AGGREGATE

NOTES

- GROUND STEEL BARS & STEEL LID
- INSTALL GALVANIZED STEEL BARS ACROSS VAULT (SQUARE CHANNEL BAR IN SLOTS INSIDE OF VAULT)
- CONDUCTORS SHALL BE NEATLY ORGANIZED & GROUPED ON BARS AS DIRECTED BY ENGINEER ON SITE
- STEEL LIDS SHALL BE MARKED 'ELECTRICAL'



CAPPED EMPTY CONDUIT ENTRY TO J.B.



NOTE: ALL CONDUITS TO DRAIN TO J.B.

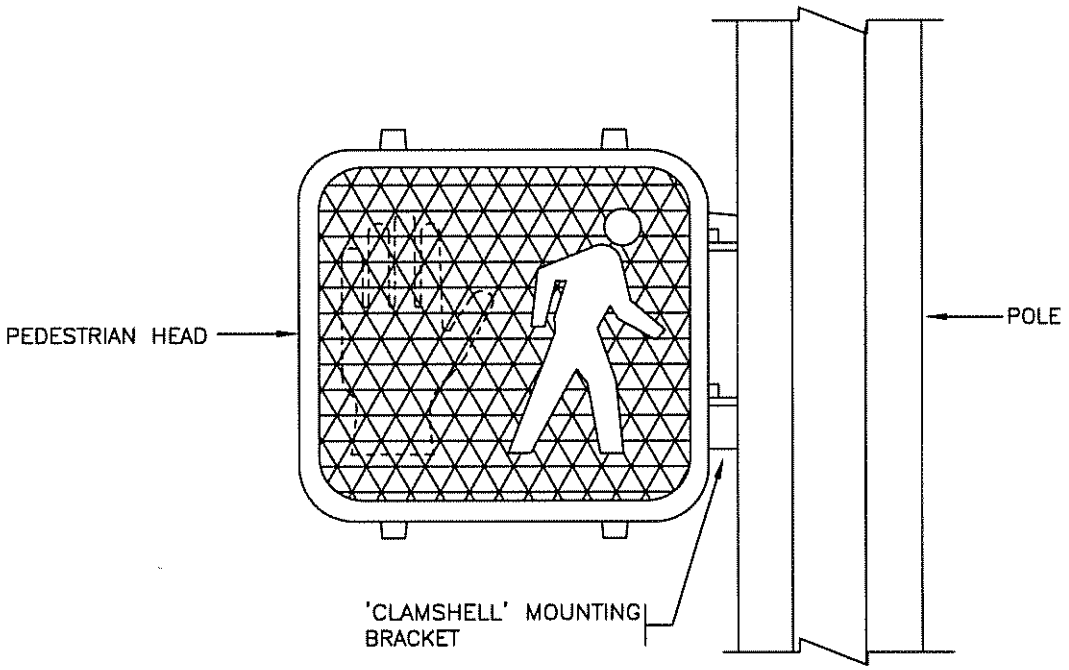
CONDUIT ENTRY TO J.B.

City of Coquitlam

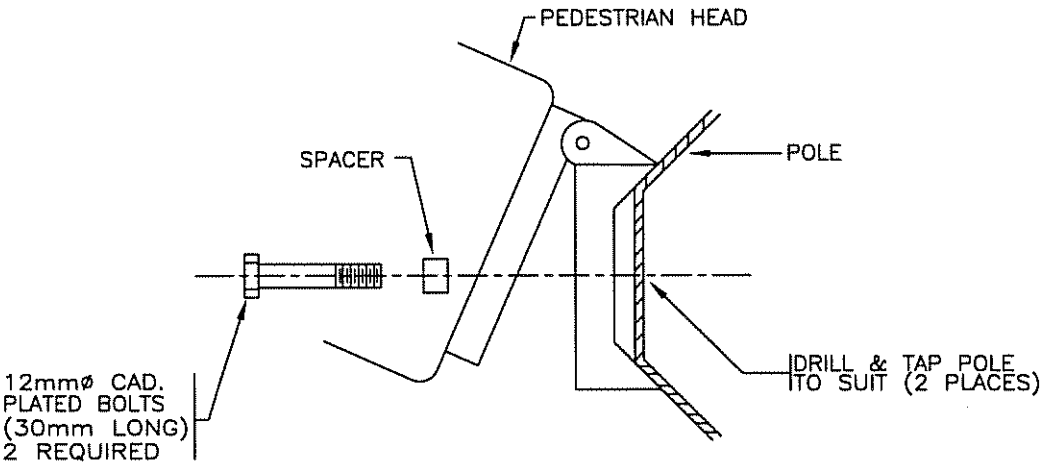
JUNCTION VAULT DETAILS (CONCRETE)

Minor text changes			1	01/03	L.M.
REVISIONS			No.	DATE:	CKD. APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:		
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-11		

FILE: E4848-11



PEDESTRIAN HEAD



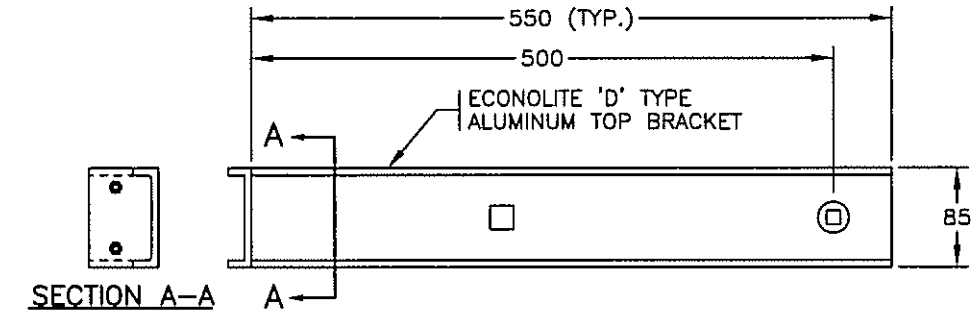
PLAN

City of Coquitlam

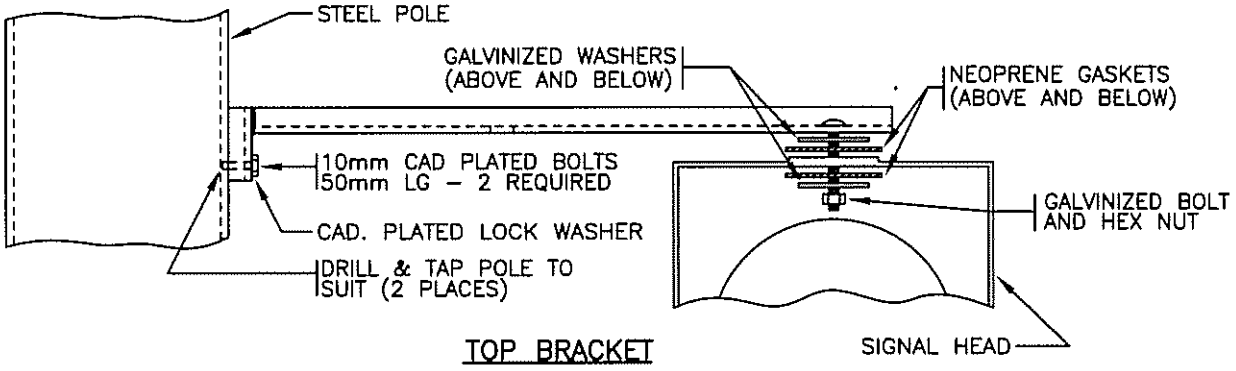
"CLAMSHELL" PEDESTRIAN HEAD MOUNTING DETAILS

Minor text changes			1	01/03	L.M.	
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-14			

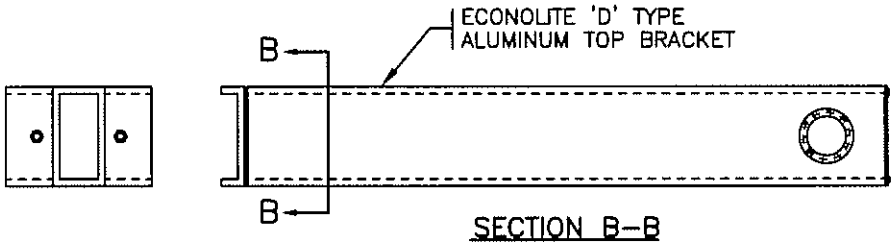
FILE: E4848-14



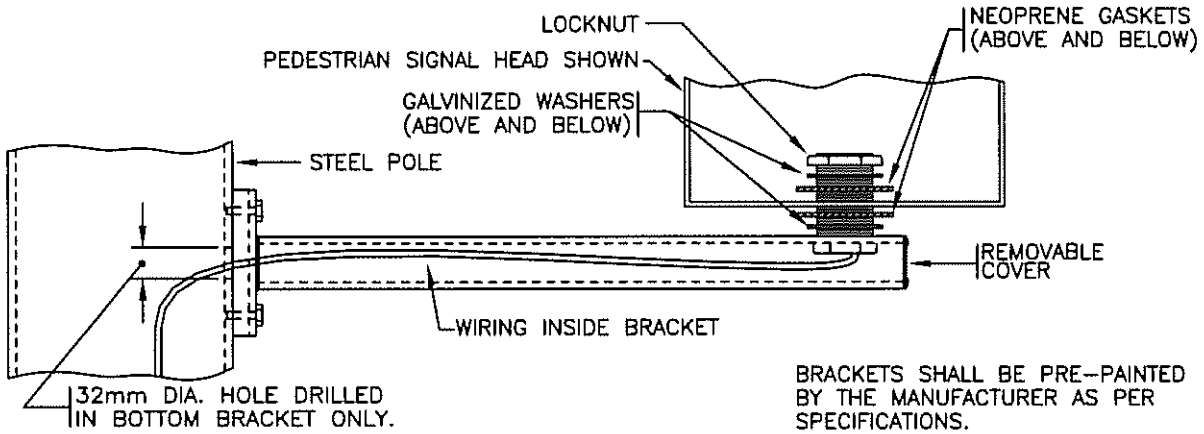
SECTION A–A



TOP BRACKET



SECTION B–B



BRACKETS SHALL BE PRE–PAINTED BY THE MANUFACTURER AS PER SPECIFICATIONS.

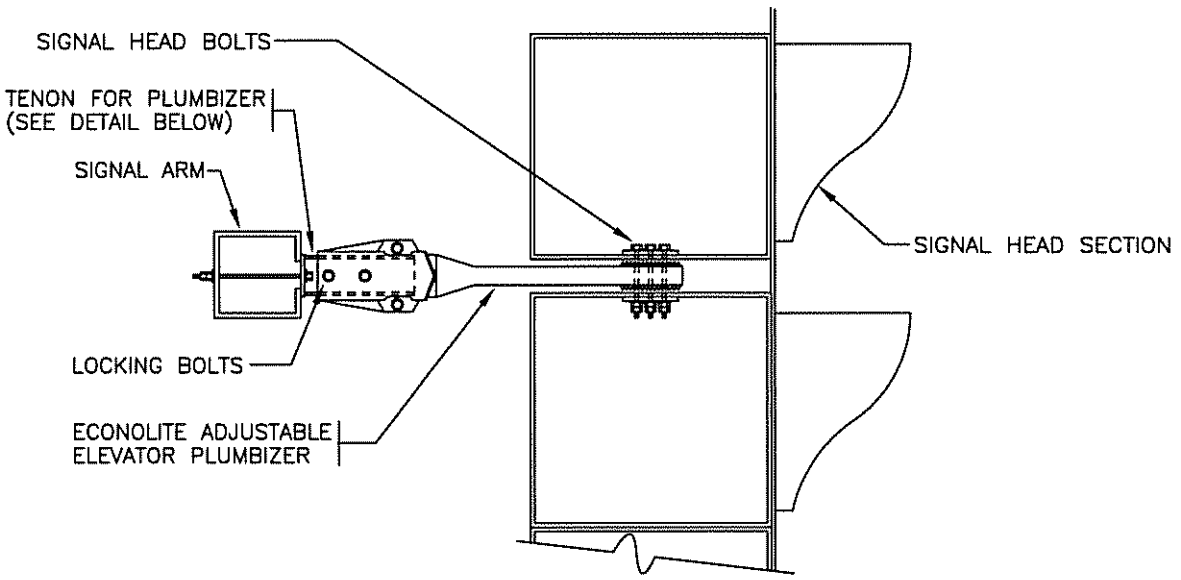
BOTTOM BRACKET

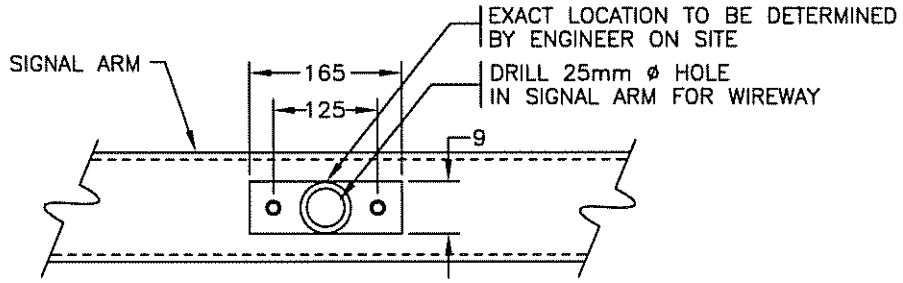
City of Coquitlam

SECONDARY & PEDESTRIAN SIGNAL HEAD
MOUNTING DETAILS FOR TOWN CENTRE STYLE SIGNALS

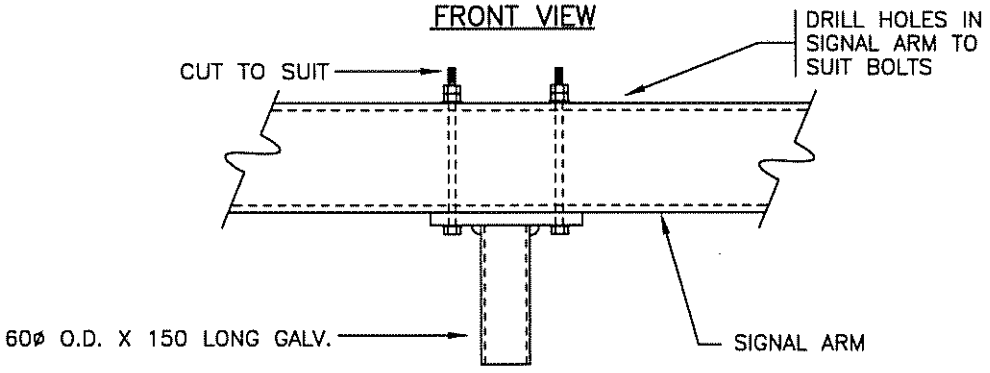
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91–03–06		DRAWING NO.: E–15			

FILE: E4848–15





FRONT VIEW



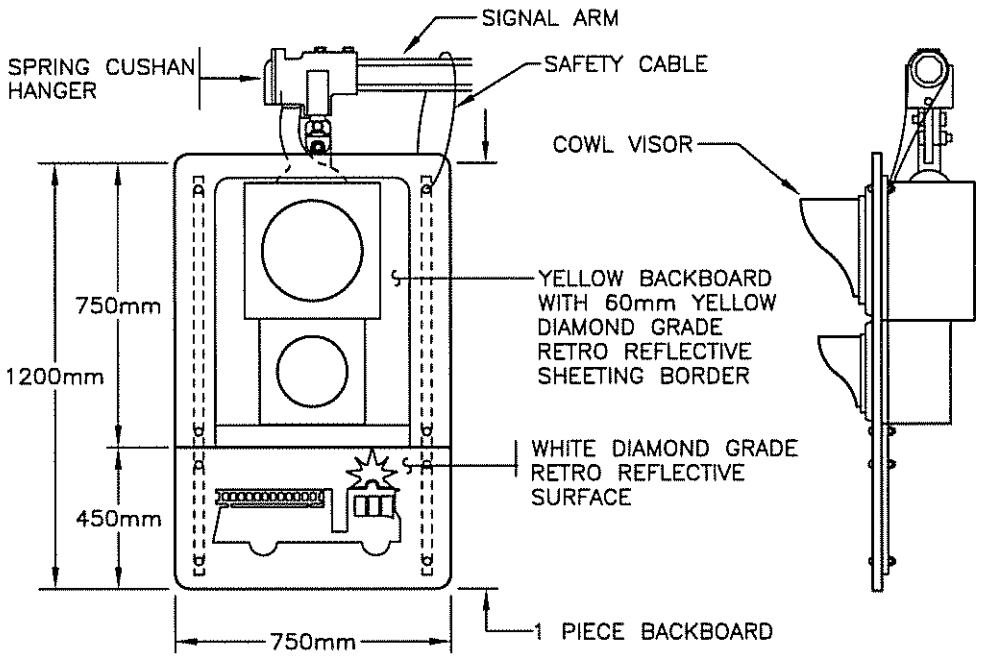
TOP VIEW

City of Coquitlam

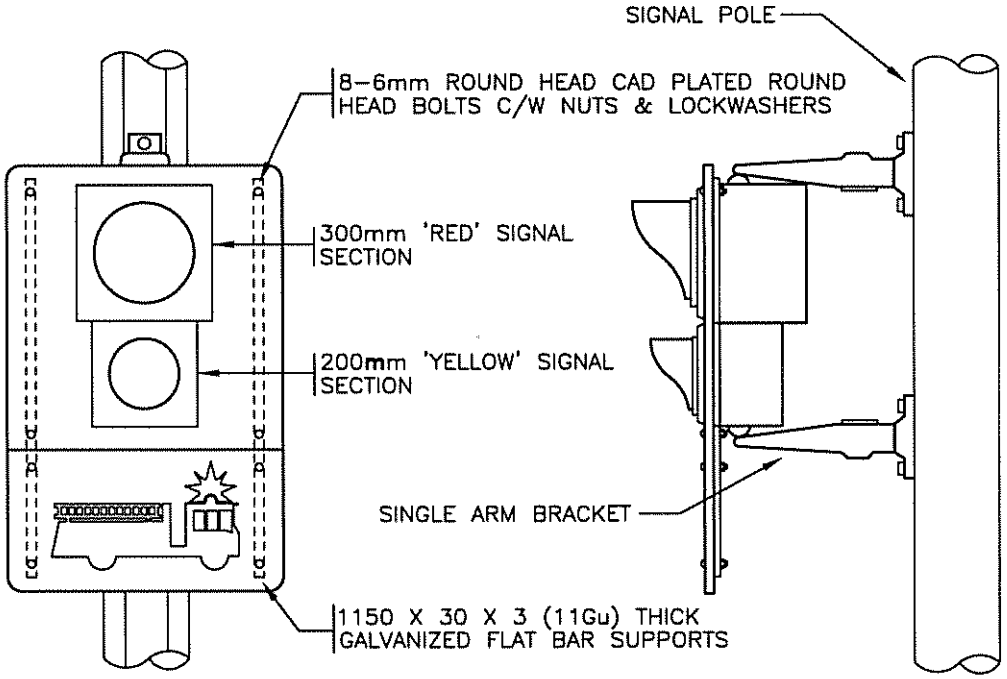
OVERHEAD SIGN HEAD MOUNTING DETAIL FOR TOWN CENTRE STYLE SIGNAL POLES.

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-16			

FILE: E4848-16



PRIMARY FIRE SIGNAL HEAD MOUNTING


SIGNAL POLE
8-6mm ROUND HEAD CAD PLATED ROUND HEAD BOLTS C/W NUTS & LOCKWASHERS
300mm 'RED' SIGNAL SECTION
200mm 'YELLOW' SIGNAL SECTION
SINGLE ARM BRACKET
1150 X 30 X 3 (11Gu) THICK GALVANIZED FLAT BAR SUPPORTS

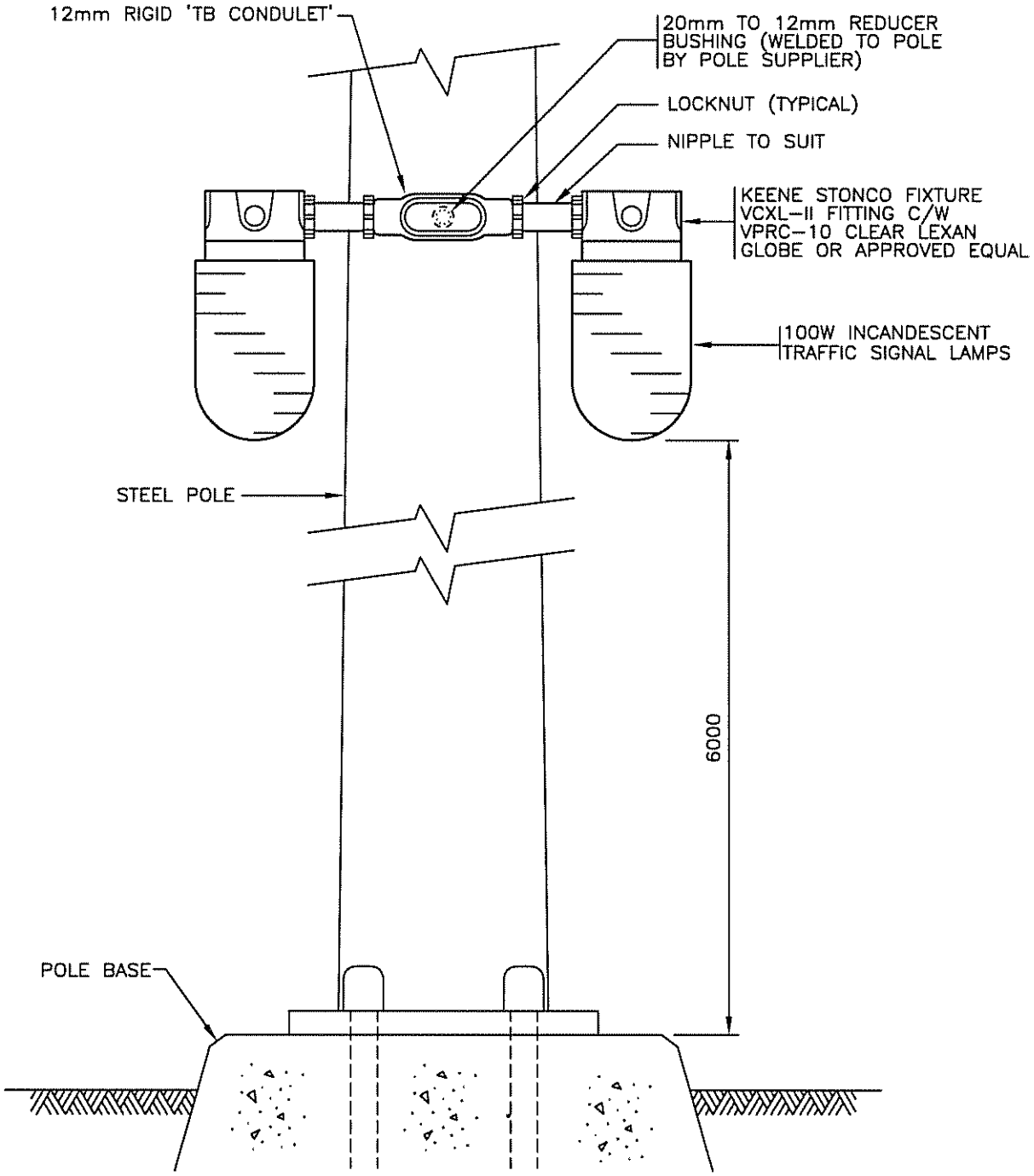
SECONDARY FIRE SIGNAL HEAD MOUNTING

City of Coquitlam

FIRE SIGNAL HEAD MOUNTING DETAILS

Text changes, Fire Truck Symbol			1	01/03	L.M.
REVISIONS			No.	DATE:	CKD. APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:		
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-17		

FILE: E4848-17

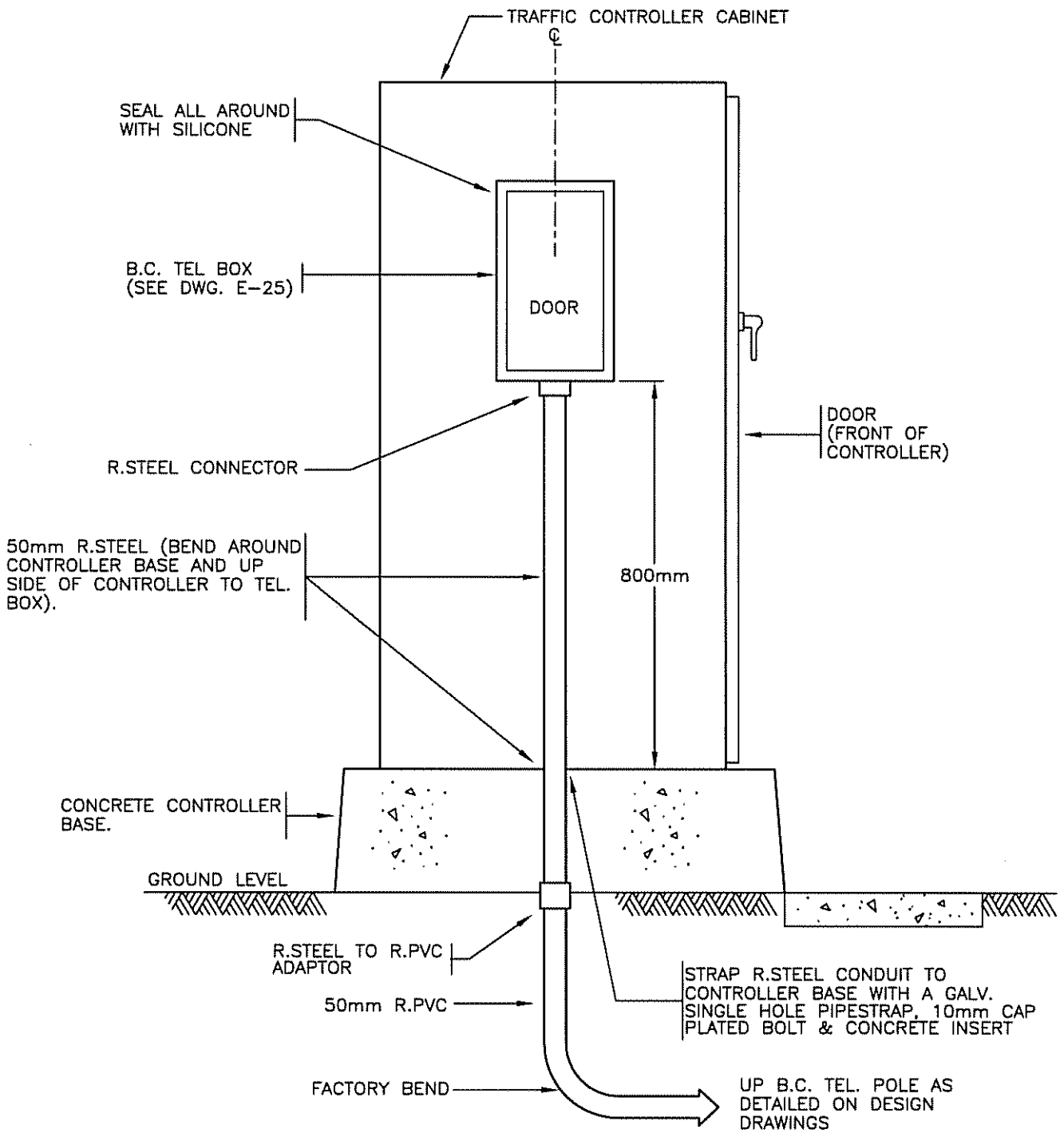

12mm RIGID 'TB CONDULET'
20mm TO 12mm REDUCER BUSHING (WELDED TO POLE BY POLE SUPPLIER)
LOCKNUT (TYPICAL)
NIPPLE TO SUIT
KEENE STONCO FIXTURE VCXL-II FITTING C/W VPRC-10 CLEAR LEXAN GLOBE OR APPROVED EQUAL
100W INCANDESCENT TRAFFIC SIGNAL LAMPS
STEEL POLE
6000
POLE BASE

City of Coquitlam

FIRE INDICATION LIGHTS

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-18			

FILE: E4848-18


TRAFFIC CONTROLLER CABINET
℄
SEAL ALL AROUND WITH SILICONE
B.C. TEL BOX (SEE DWG. E-25)
DOOR
DOOR (FRONT OF CONTROLLER)
R.STEEL CONNECTOR
50mm R.STEEL (BEND AROUND CONTROLLER BASE AND UP SIDE OF CONTROLLER TO TEL. BOX).
800mm
CONCRETE CONTROLLER BASE.
GROUND LEVEL
R.STEEL TO R.PVC ADAPTOR
50mm R.PVC
STRAP R.STEEL CONDUIT TO CONTROLLER BASE WITH A GALV. SINGLE HOLE PIPESTRAP, 10mm CAP PLATED BOLT & CONCRETE INSERT
FACTORY BEND
UP B.C. TEL. POLE AS DETAILED ON DESIGN DRAWINGS

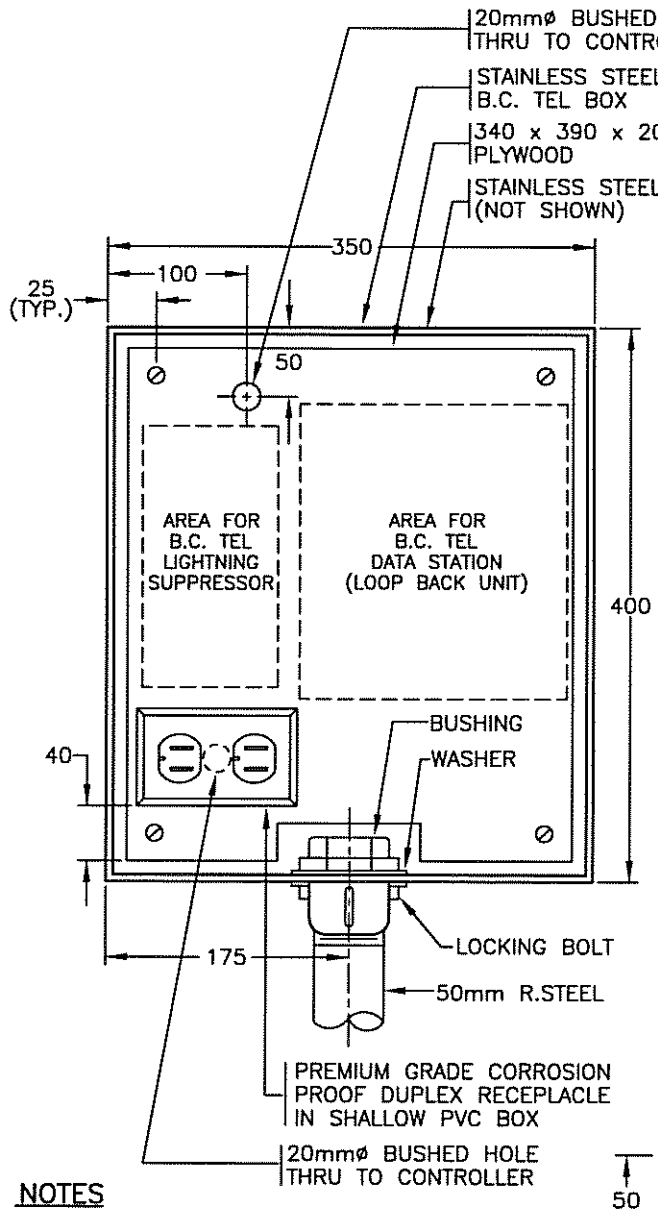
City of Coquitlam

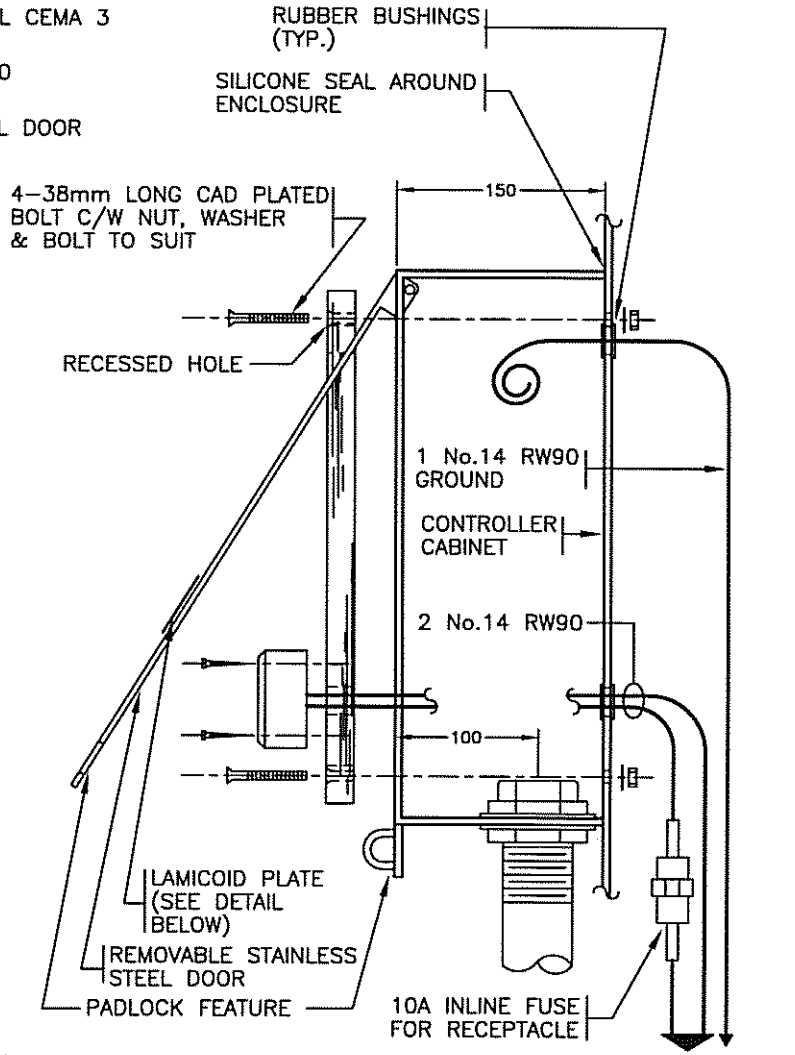
B.C. TEL BOX ON SIDE OF TRAFFIC CONTROLLER

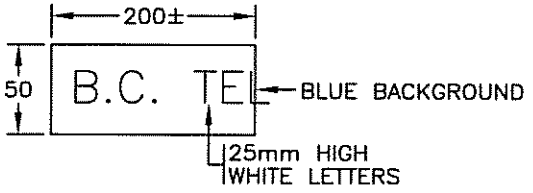
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-24			

FILE: E4848-24

FILE: E4848-25







LAMICOID NAME PLATE DETAIL

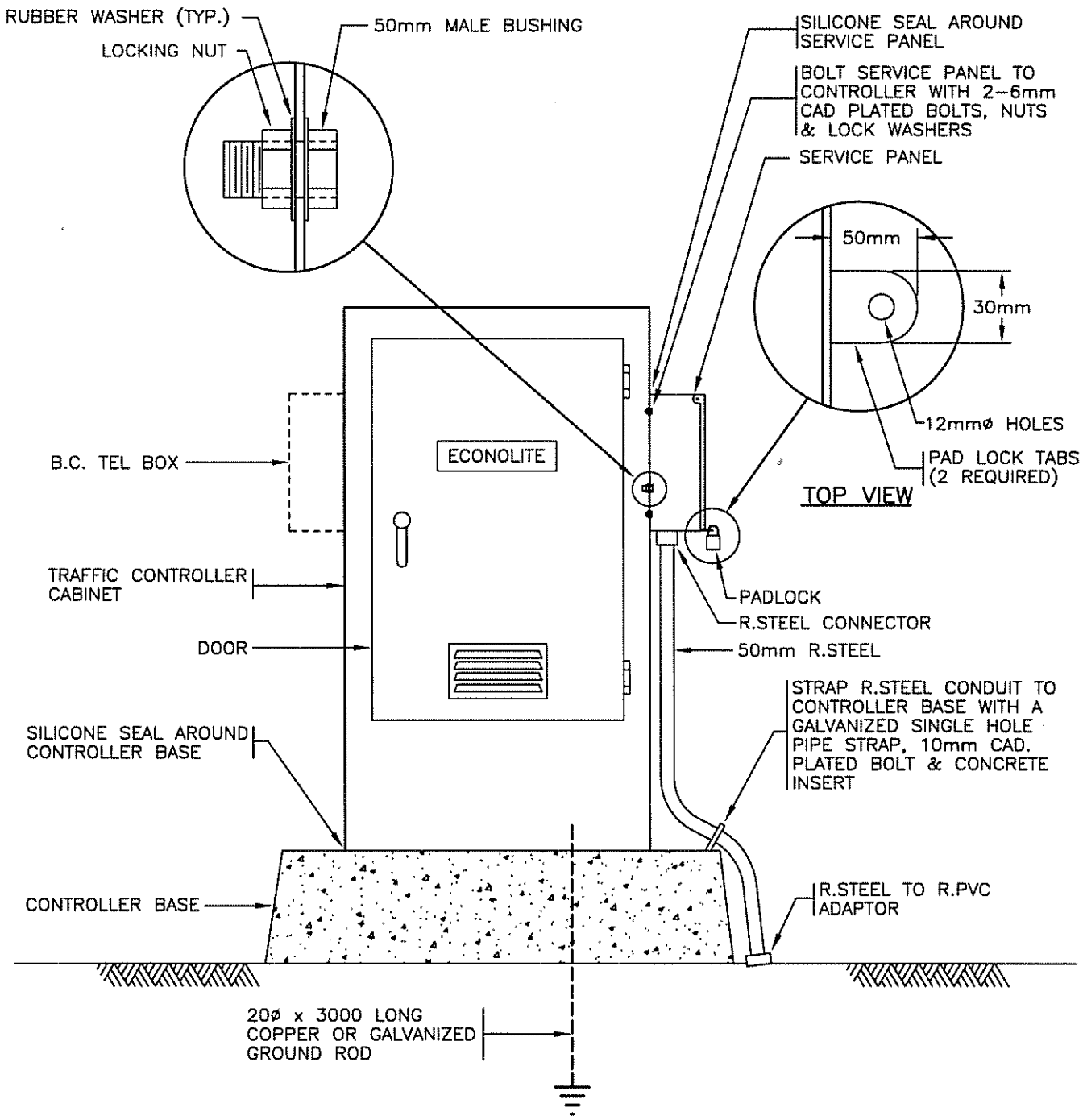
NOTES

1. B.C. TEL BOX C/W RECEPTACLE & PLYWOOD BACKBOARD SHALL BE PURCHASED FROM 'WESTCOAST ELECTRIC LTD' OR APPROVED EQUAL.
2. ALL BOLTS, NUTS, WASHERS, BUSHINGS & SCREWS SHALL BE CAD PLATED.

City of Coquitlam

B.C. TEL BOX

SCALE: N.T.S.	DESIGNED BY: D.S.M.	REVISIONS	
DATE: 91-03-06	DRAWN BY: R.F.		
	CHECKED BY:		
DRAWING NO.: E-25	APPROVED BY:	No.	
		DATE:	
		CKD.	
		APP.	

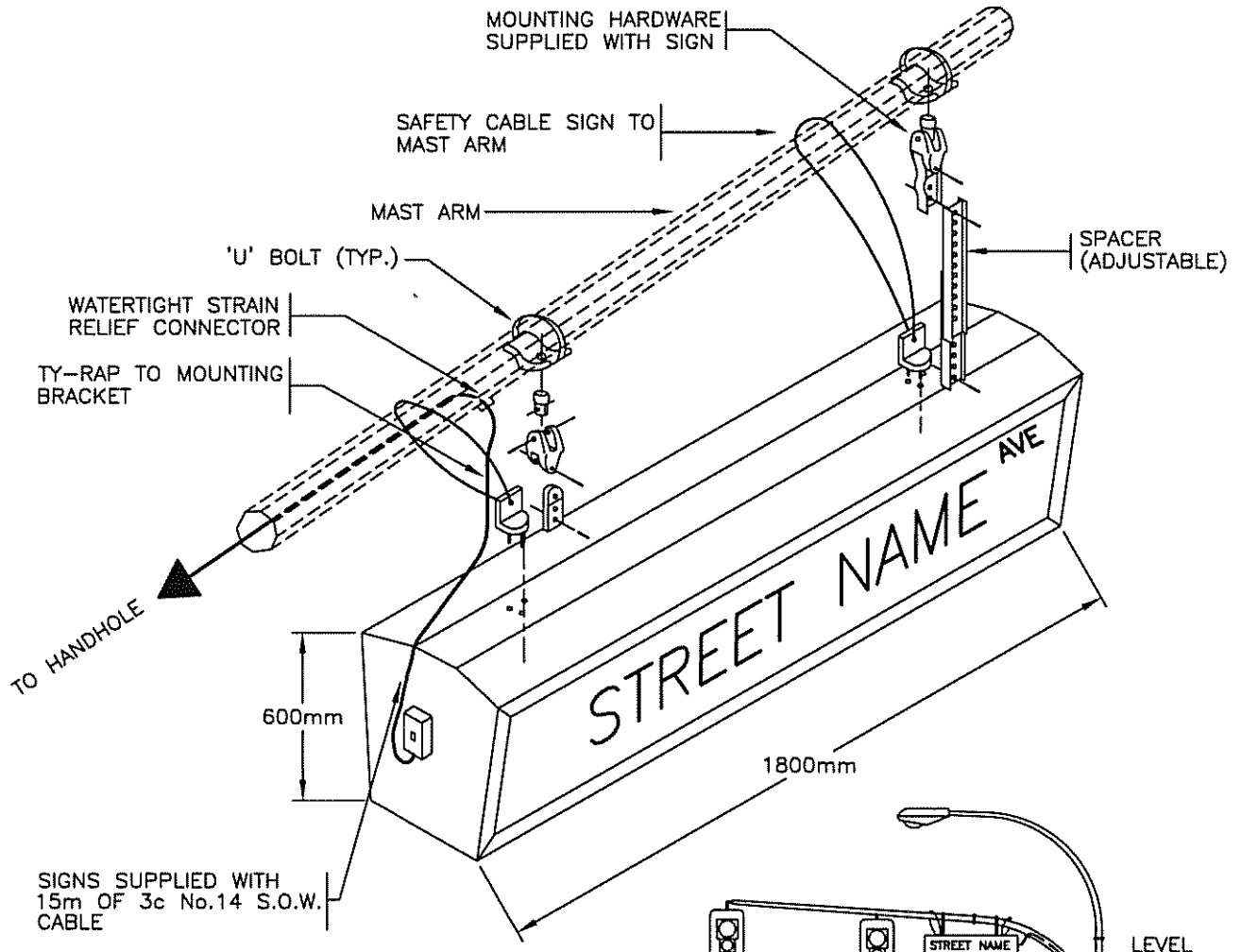

RUBBER WASHER (TYP.)
LOCKING NUT
50mm MALE BUSHING
SILICONE SEAL AROUND SERVICE PANEL
BOLT SERVICE PANEL TO CONTROLLER WITH 2-6mm CAD PLATED BOLTS, NUTS & LOCK WASHERS
SERVICE PANEL
50mm
30mm
12mmø HOLES
PAD LOCK TABS (2 REQUIRED)
TOP VIEW
B.C. TEL BOX
ECONOLITE
TRAFFIC CONTROLLER CABINET
DOOR
PADLOCK
R.STEEL CONNECTOR
50mm R.STEEL
STRAP R.STEEL CONDUIT TO CONTROLLER BASE WITH A GALVANIZED SINGLE HOLE PIPE STRAP, 10mm CAD. PLATED BOLT & CONCRETE INSERT
SILICONE SEAL AROUND CONTROLLER BASE
CONTROLLER BASE
R.STEEL TO R.PVC ADAPTOR
20ø x 3000 LONG COPPER OR GALVANIZED GROUND ROD

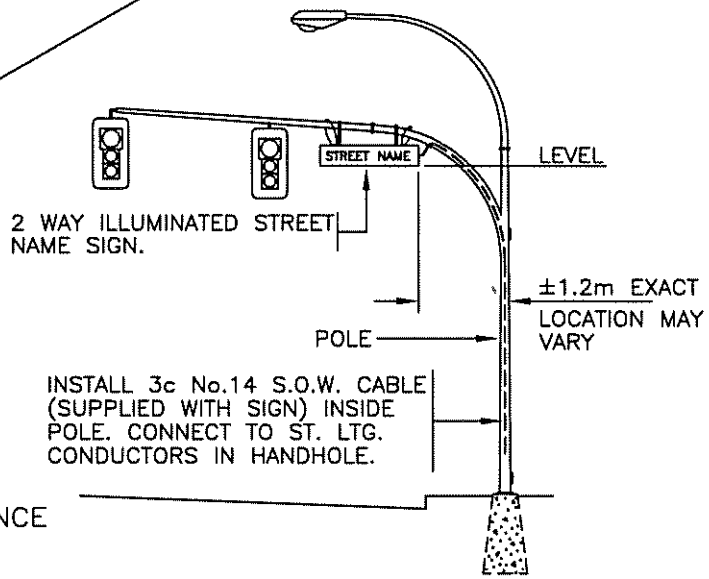
City of Coquitlam

SERVICE PANEL ON THE SIDE OF CONTROLLER DETAIL

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-26			

FILE: E4848-26




STREET NAME
LEVEL
2 WAY ILLUMINATED STREET NAME SIGN.
±1.2m EXACT LOCATION MAY VARY
POLE
INSTALL 3c No.14 S.O.W. CABLE (SUPPLIED WITH SIGN) INSIDE POLE. CONNECT TO ST. LTG. CONDUCTORS IN HANDHOLE.

WEIGHT:
APPROX. 31.8kg. (70lbs.)

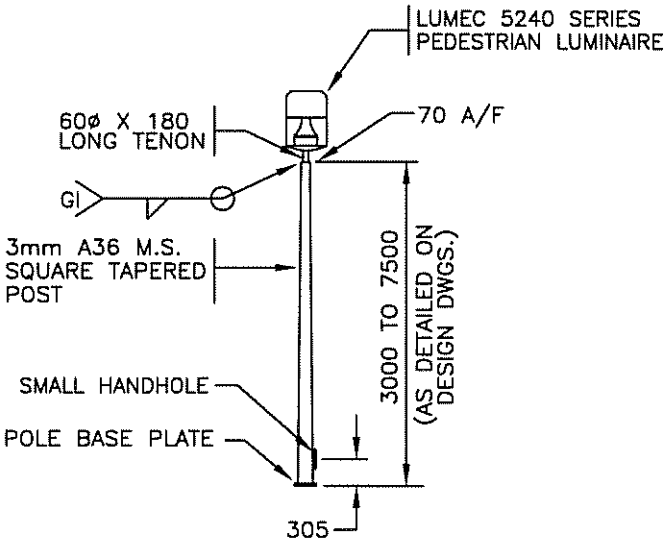
-CSA OR B.C. ELECTRICAL SPECIAL ACCEPTANCE
-ALL WEATHER EXT. DISCONNECT SWITCH

City of Coquitlam

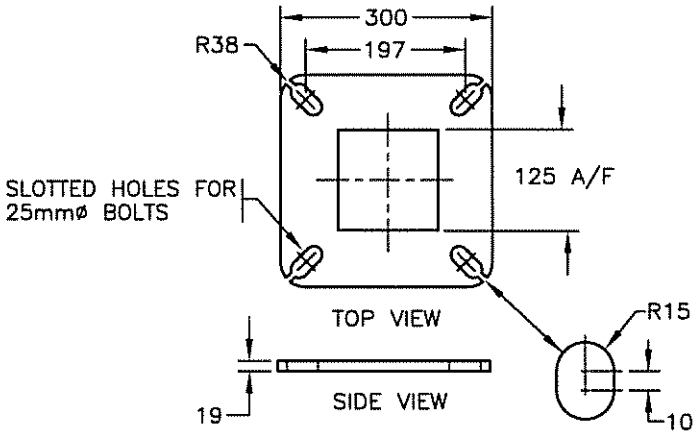
ILLUMINATED STREET NAME SIGN MOUNTING DETAILS

All Weather Switch Box added	1	Nov. 98		L.H
REVISIONS	No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:	
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-29	

FILE: E4848-29



POLE



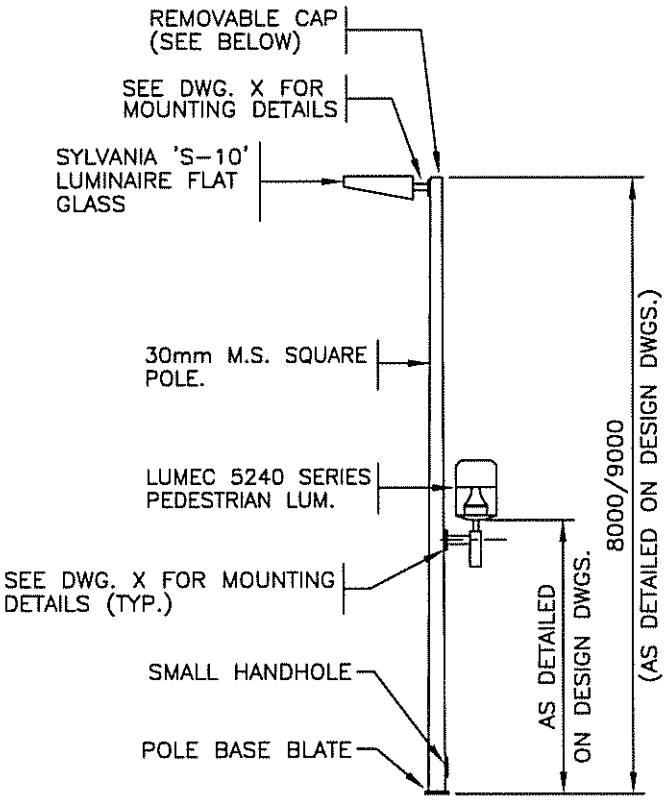
POLE BASE PLATE

FILE: E4848-39

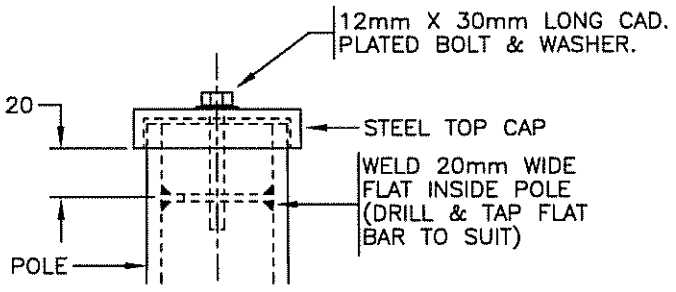
City of Coquitlam

TOWN CENTER STYLE PEDESTRIAN STREETLIGHT POLE

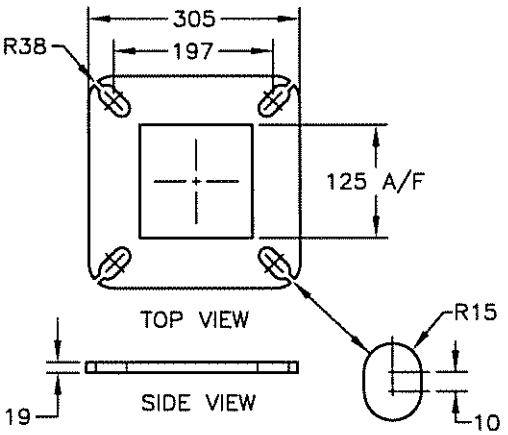
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-39			


REMOVABLE CAP (SEE BELOW)
SEE DWG. X FOR MOUNTING DETAILS
SYLVANIA 'S-10' LUMINAIRE FLAT GLASS
30mm M.S. SQUARE POLE.
LUMEC 5240 SERIES PEDESTRIAN LUM.
SEE DWG. X FOR MOUNTING DETAILS (TYP.)
SMALL HANDHOLE
POLE BASE BLATE
AS DETAILED ON DESIGN DWGS.
8000/9000 (AS DETAILED ON DESIGN DWGS.)

POLE



CAP DETAIL



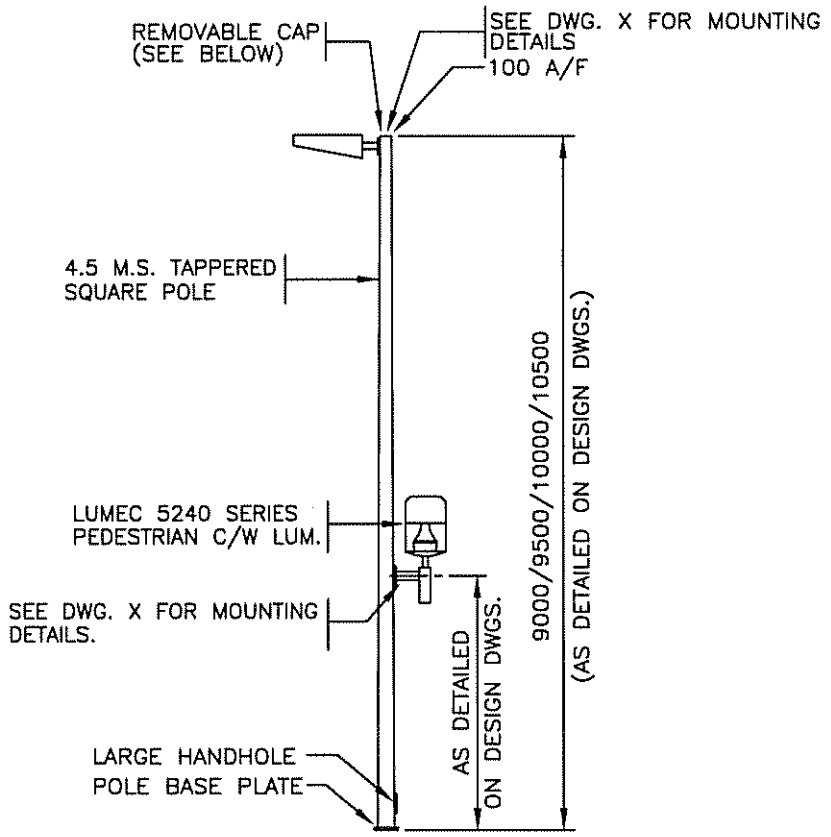
POLE BASE PLATE

City of Coquitlam

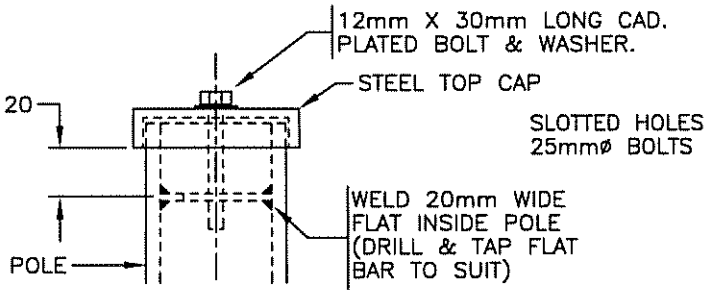
SMALL TOWN CENTER STYLE STREETLIGHT POLES (SQUARE POLES)

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-40			

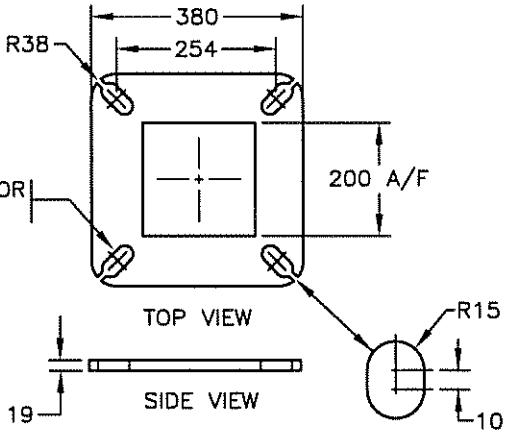
FILE: E4848-40



POLE



CAP DETAIL



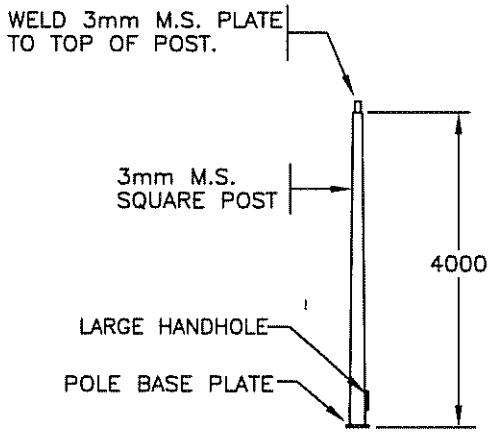
POLE BASE PLATE

City of Coquitlam

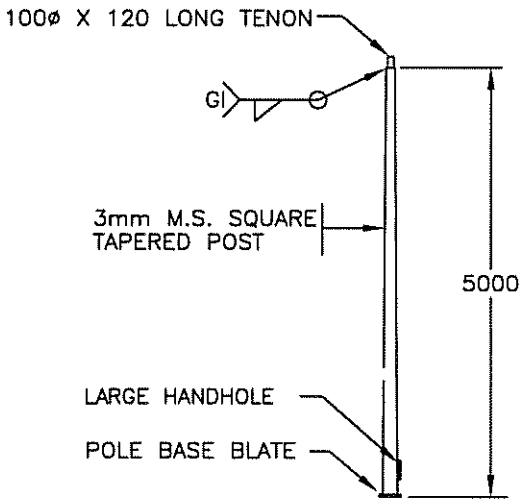
LARGE TOWN CENTER STYLE STREETLIGHT POLES (TAPPERED POLES)

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-41			

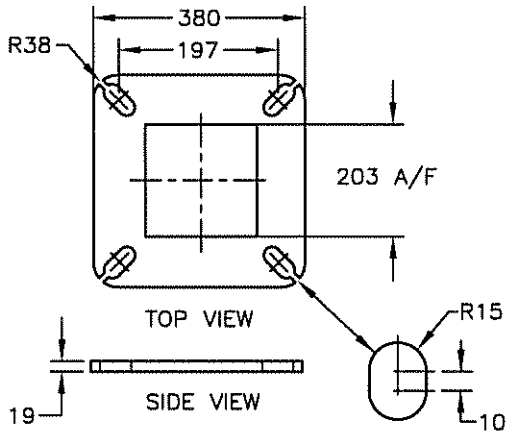
FILE: E4848-41



TRAFFIC SIGNAL POST
(FOR SECONDARY & PED. HEADS)



TRAFFIC SIGNAL POST
(FOR PRIMARY HEADS)



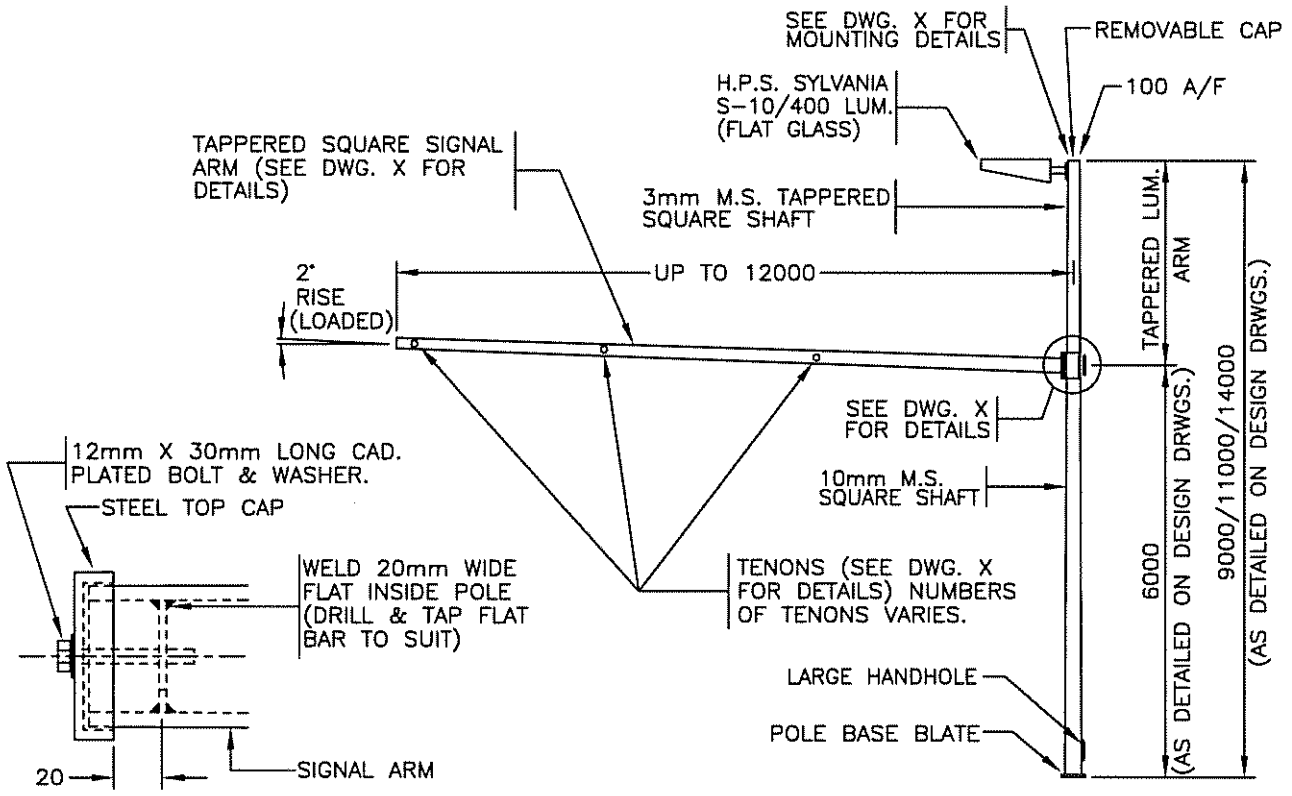
POLE BASE PLATE

City of Coquitlam

TOWN CENTER STYLE TRAFFIC SIGNAL POSTS

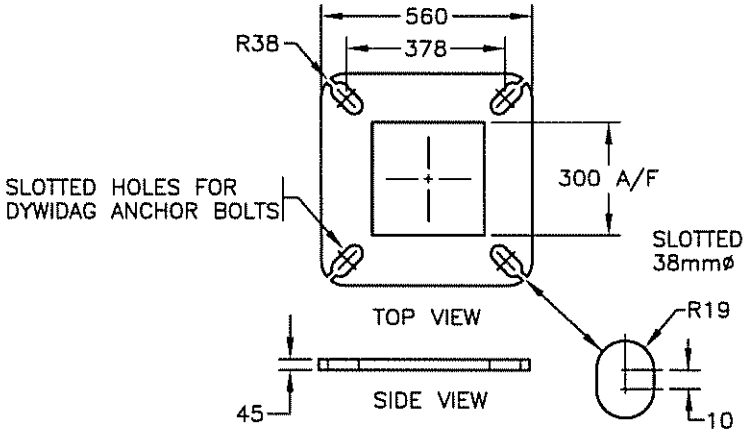
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-42			

FILE: E4848-42

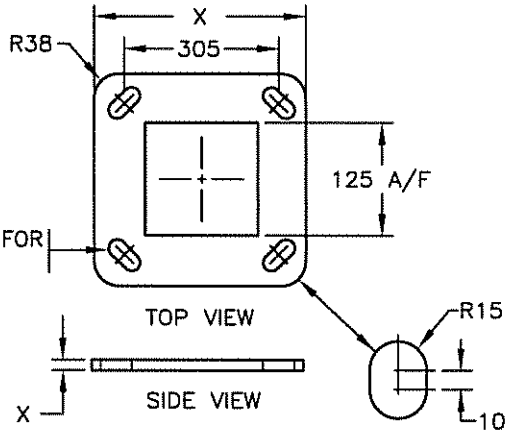

SEE DWG. X FOR MOUNTING DETAILS
REMOVABLE CAP
H.P.S. SYLVANIA S-10/400 LUM. (FLAT GLASS)
100 A/F
TAPPERED SQUARE SIGNAL ARM (SEE DWG. X FOR DETAILS)
3mm M.S. TAPPERED SQUARE SHAFT
2° RISE (LOADED)
UP TO 12000
TAPPERED LUM. ARM
SEE DWG. X FOR DETAILS
10mm M.S. SQUARE SHAFT
12mm X 30mm LONG CAD. PLATED BOLT & WASHER.
STEEL TOP CAP
WELD 20mm WIDE FLAT INSIDE POLE (DRILL & TAP FLAT BAR TO SUIT)
TENONS (SEE DWG. X FOR DETAILS) NUMBERS OF TENONS VARIES.
6000
(AS DETAILED ON DESIGN DRWGS.)
9000/11000/14000
(AS DETAILED ON DESIGN DRWGS.)
LARGE HANDHOLE
POLE BASE BLATE
20
SIGNAL ARM

CAP DETAIL

SPECIAL COMBINATION POLE



POLE BASE PLATE



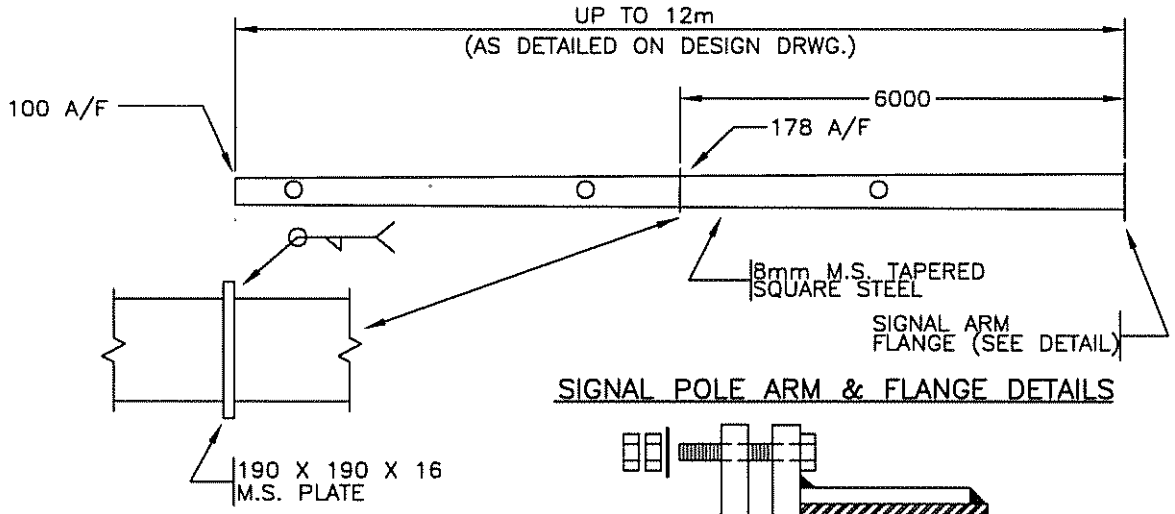
FLANGE DETAIL

City of Coquitlam

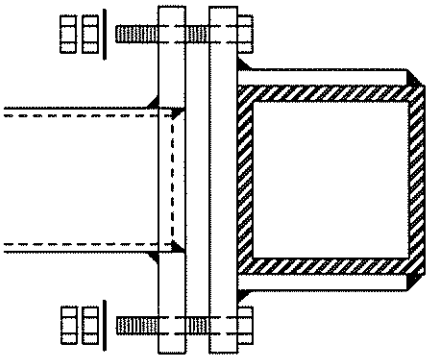
TOWN CENTER STYLE TRAFFIC SIGNAL POLES

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-43			

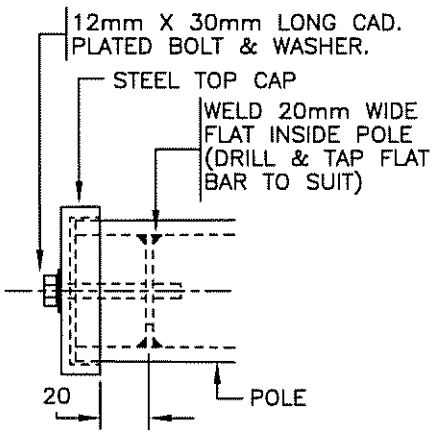
FILE: E4848-43



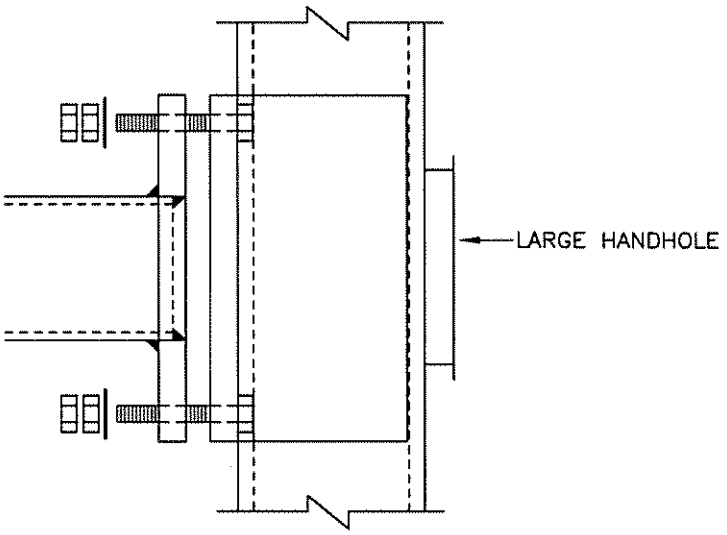
SIGNAL POLE ARM & FLANGE DETAILS



TOP VIEW



CAP DETAIL



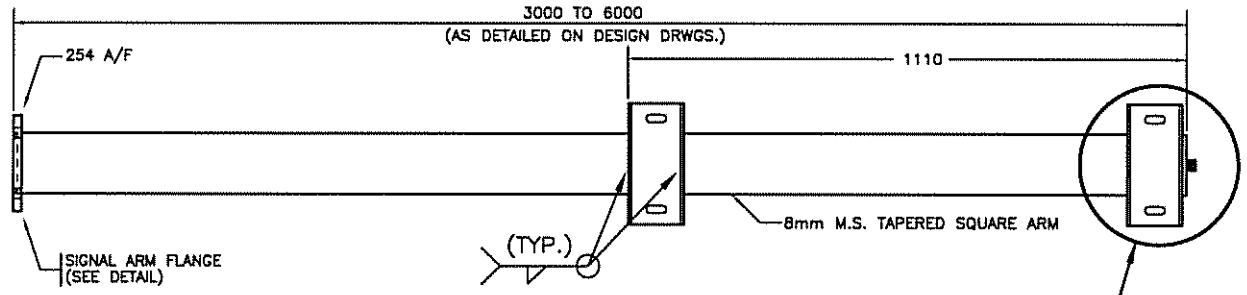
FRONT VIEW

City of Coquitlam

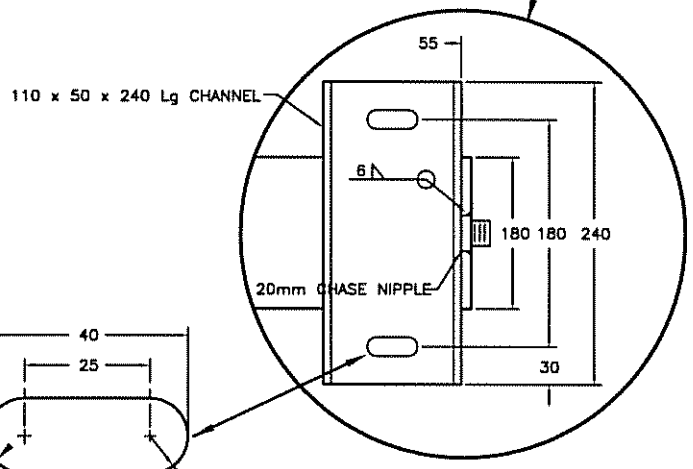
TOWN CENTER STYLE SIGNAL POLE ARM & FLANGE DETAILS

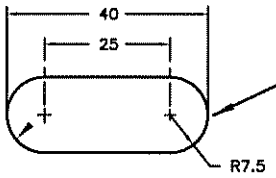
REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-44			

FILE: E4848-44

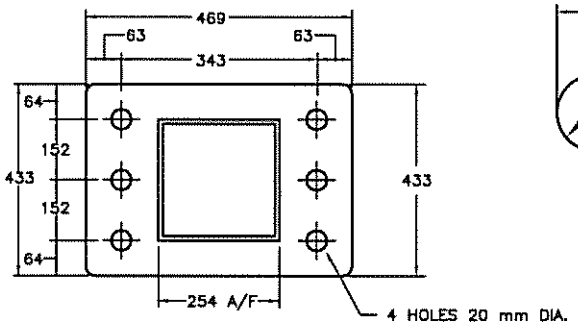


FSIGNAL ARM





40 x 15 mm
SLOTTED HOLE



SIGNAL ARM FLANGE

FILE: E4848-45

City of Coquitlam

TOWN CENTRE STYLE SIGN ARM

REVISIONS			No.	DATE:	CKD.	APP.
DESIGNED BY: D.S.M.	DRAWN BY: R.F.	CHECKED BY:	APPROVED BY:			
SCALE: N.T.S.	DATE: 91-03-06		DRAWING NO.: E-45			